The Magazine of

STANDARDS

How to [illegible] accidents

January 1955

The Magazine of
STANDARDS
Formerly Standardization

FEBRUARY 1955 Volume 26, No. 2

In Two Parts—Part 1

Published monthly by American Standards Association, Incorporated
70 East 45th Street, New York 17, N. Y.

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In This Issue

For Companies

Is Your Woodworking up to date with Safety for Saws? By Edward F. Steinman 37
How to Keep Printing Presses Safe. By Peter J. Bernard 40
What Are Your Comments on the Electrical Instruments Standards? 59

International

USA's Part in International Meetings 42
International Methods for Testing Colorfastness of Textiles. By Wm D. Appel 44
International Mica Committee Makes Progress. By G. A. Purcell 46
ISO Plastic Committee Meets 47
How U.S. Delegates Rate International Meetings 48
From Other Countries 57

News Briefs 39

News from Societies 55

What Is Your Question? 62

Standards Outlook

By Leo B. Moore 63

American Standards Activities

American Standards. Status as of January 24, 1955 60
What's New on American Standard Projects 62

Single copy 50¢. $7.00 per year (foreign $8.00). Schools and libraries $5.00 (foreign $6.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 25, 1954, at the Post Office, New York, N. Y., under the Act of March 3, 1879.
Opinions expressed by authors in THE MAGAZINE OF STANDARDS *are not necessarily those of the American Standards Association.*

MARGINAL NOTES

The 1955 List of American Standards

The complete list of American Standards, brought up-to-date as of February 1, 1955, is Part II of this issue. This is the first published edition of the list since the March, 1954, issue of THE MAGAZINE OF STANDARDS.

One of the features of the pamphlet is an index to titles of standards. This year, as it was last year, the index is published in the front of the book as a reference aid. The index is continually under scrutiny to make it more helpful as a guide to the numerical listing of the standards.

Most recent count of available American Standards shows there are now 1440 on the active list. Some were developed by the 200 national committees of experts in many fields that work under the procedure of ASA. Others were submitted by the originating societies as existing standards.

The Standards Council of the American Standards Association is responsible for approval of American Standards. The Council is made up of representatives of all Member-Bodies of ASA. A. S. Johnson, taking office as chairman at the Council's meeting January 25, outlined his philosophy as a possible guide for future operations of the Council. He said:

"In the past three years Mr Townsend has kept before you constantly the realization that industry needs more technical and scientific information. We have reached a point where scientific knowledge has been engineered to a point of usefulness; however, now the need is for more and better distribution of information. I look upon ASA as an intellectual society, representing the scientific and engineering mind and also the management mind. The business of ASA is to evaluate information and codify it into its most useful form for whoever may need it.

"A strange thing is going on in the Western world right now. There

appears to have been a 150 percent increase in real wages in this last half century; in the past, wages have only doubled about every 300 years.

"Instead of storing up wealth, the Western world is operating on the idea of distributing the many good things it can now produce. This applies to all but one thing. We seem to be afraid to distribute information. Perhaps that is right from a national security point of view. But all of us in our private lives—in our normal relationships—should examine very carefully any resistance to penetration of information and see whether this tendency might not be driving us backward rather than helping us move forward.

"The ASA Standards Council can do well to look upon itself as a codifier of knowledge useful to the world, to the entire Western world, at least. It is in that affirmative, forward-looking sense that I would like to pick up where John Townsend left off."

Errata—

The editors' apologies to all concerned—

The modern steel mills at Huatchipato, Chile, shown on page 390, December, 1954, is a fine example of industrial development in South America. However, the caption was in error in mentioning that the wire mill and ferro-alloy plant were shown in the foreground. The mills would have been shown if the picture had been taken from a higher point of ground some distance back from the actual point of photography.

On page 22, January, 1955, a picture of W. R. Murray, Bigelow-Sanford Carpet Company, is erroneously identified as that of Richard P. White.

Richard P. White

This Month's Standards Personality

Mrs Dorothy M. Shackleford

At ASME committee meetings, and at meetings of ASA's Mechanical Standards Board and Standards Council, the slim figure of "Shack" (professionally, Mrs Dorothy Shackleford; privately, Mrs Stanley Tucker) is regularly seen. This is as it should be since "Shack" is Standards Administrator for the American Society of Mechanical Engineers. In this capacity she rides herd on committees working on interchangeable dimensions of machine tools, screw threads, cylindrical parts, pipe flanges and fittings, bolts and nuts, and similar machine parts. The job is a huge one. More than 350 inspection codes and manufacturing standards committees and subcommittees come under her supervision. They range over a wide variety of mechanical subjects—from screw threads and metal thicknesses to machine tools and drafting standards. Many of them are among the large group of highly important American Standards in the "B" group—Mechanical Engineering—in ASA's list of standards.

"Shack" graduated to standards from gas turbines, although she still keeps a finger on the turbine field as secretary of ASME's gas turbine division.

Impressed by the urgent need for engineers during the war, she left Grinnell College, where she was a physics major, to go to work for the Wright Aeronautical Division of Curtis Wright Corporation at Patterson, New Jersey. There she combined work in the jet engine phases of the gas turbine field with an evening engineering training program. At the end of the war, her experience with Wright brought her a job that carried the only title she has, as she says, "ever been really proud of"—that of chief test engineer. This was with the Turbo Engineering Corporation, a small company set up during the war by the navy to conduct experiments on new gas turbine compressors.

When the American Locomotive Company needed someone to do gas turbine research, however, she became the "one-woman gas turbine research department" for the firm.

"Shack" is one of the 70 women engineers who are members of ASME. It was an unusual recognition of her ability that brought her appointment as secretary of the ASME turbine division when it was newly created in 1947. It speaks well for her handling of the job that she is still secretary.

Dorothy Shackleford has been with ASME as Standards Administrator since 1950. She and her husband, S. A. Tucker, head of publications for ASME, were married in December of that year. Fortunately, her husband has an active interest in the work she is doing. It only amuses him that she hates domestic science and "can't even sew a button on a shirt." She takes her engineering into the home, Stan says. Instead of sewing loose buttons on his shirts, she pins them on, using a hairpin like a cotter pin. The buttons stay on, her husband reports.

OUR FRONT COVER

Glue clamps on a drawer pull. Operator is shown approaching his work properly, drawer is secure, and if a clamp did fall it would fall in open space. Article on woodworking safety, page 37.

Is Your Machinery

Some safe methods *of using woodworking machinery. Above, operator uses jig to keep hands away from moving drill. Operator's sleeves are rolled and he wears protective apron and cap. Right, precautions are taken in use of hot plate veneer press. Protective clothing, subject of other standards, includes apron, gloves, short-sleeve shirt, and safety glasses. Below, new type rough mill conveyor that carries lumber through facing, planing, joining operations without handling. Note jointer is arranged so operator removes boards without getting near jointer knives.*

J. L. Metz Furniture Company

in Line with Up-to-Date

Safety for Woodworking

by EDWARD F. STEINMAN

TECHNOLOGICAL changes in use of new materials and equipment during the past ten years have been taken into account in preparing an up-to-date edition of the American Standard safety code for woodworking machinery. Ten years ago, in 1944, a completely revised edition of the safety standard was issued. It set minimum requirements for safeguarding the operators of woodworking machines wherever such machines are used in industry. The high speeds at which woodworking machines operate, and their sharp cutting edges, constitute a serious hazard. In the past this has caused an unusually high record of permanent disabilities in relation to the number of woodworking accidents.

The safety standards of which this new edition is the most recent have helped to give some protection against these hazardous conditions. A survey made by the U.S. Bureau of Labor Standards in 1951 (STDZN, March 1951, p 80) showed that a number of states were using the standard as a guide for their safety regulations. At that time six states had adopted the 1944 edition of the American Standard Safety Code in full. Seventeen others followed the standard in part. On the other hand, 22 states did not have a woodworking safety standard of any kind.

Important changes in the new edition of the woodworking code include additional provisions for the height of working tables; protection against electrical hazards; marking of safe operating speeds; an entire revision of the section on cooperage machinery; and new safety provisions for lathes.

After completing the new revision of the standard, the committee in charge found there are still many problems to be solved. It recommends that research be continued to determine the thickness of various materials needed to retain broken pieces of saws, knives, and other cutting edges; on safe operating speeds for various types of saws; on jointer guarding; and on methods of arresting the free coasting of cutting blades.

The committee foresees that there may be many questions of interpretation and problems still to be solved. It is continuing its work as an advisory committee. Questions concerning use of the standard should be sent to the American Standards Association to be forwarded to the committee.

The first safety code for woodworking plants was approved in 1930. In 1939 the scope of the code was broadened to apply to woodworking machinery, wherever located, in addition to manufacturing plants. The code was further revised in 1944, in order to bring it up to date and to amplify many points. In the early part of 1952 the committee was reorganized. From the many communications received, it was decided that a further revision was necessary and that some editorial changes in the existing code had to be made. In making these changes the original intent was retained, but the phraseology was changed to clarify the context. An example of this is in the prohibition of oscillating saws. It was evident that the term "oscillating saw" was not well known, so, without naming the saw, the type of operation was described in the new edition.

The provision for the height of machine tables or working surfaces now covers auxiliary tables or supports for work in progress. The appendix in connection with this same item has also been clarified, stating that the recommended heights shown in the table are for persons of average stature and that suitable corrections will have to be made if the machines are to be operated by persons of less than average height. This change was necessary, since communications indicated that many persons of less than average height, especially in vocational schools, have been subjected to unusual hazards because of unnatural working position.

While the revision was being developed, research indicated that there were numerous accidents caused by electrical hazards. It is now recommended that woodworking machinery, including the metal

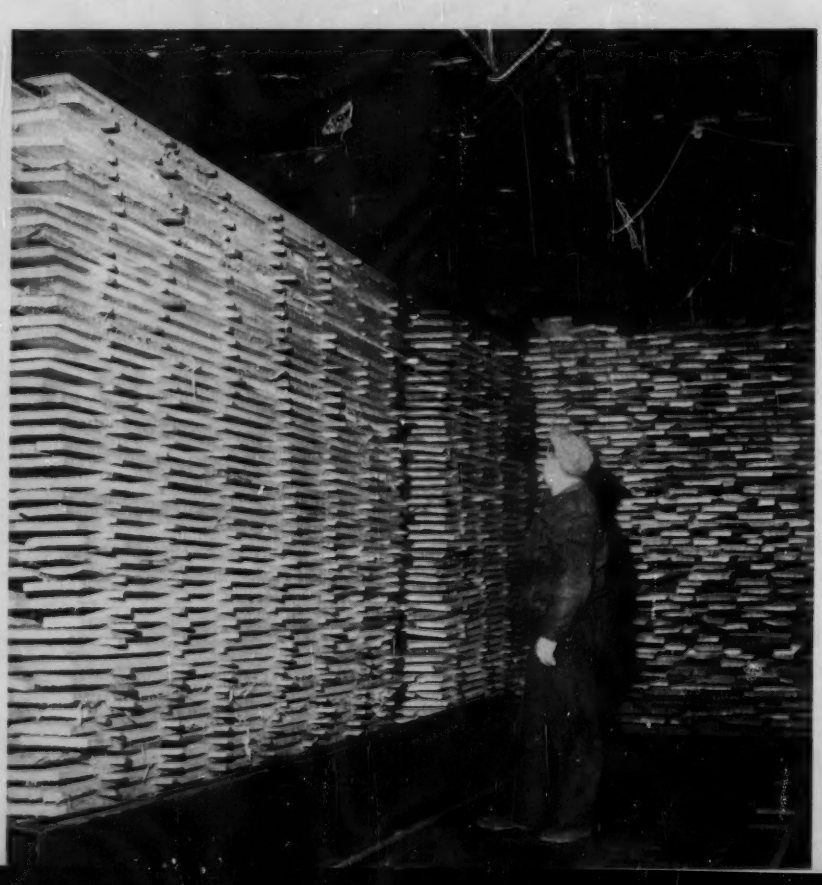
Mr Steinman is in the Safety Engineering Department of the United States Fidelity and Guaranty Company, Baltimore, Maryland. He is chairman of Sectional Committee O1 on Safety Code for Woodworking Machinery.

Sectional Committee O1 works under the sponsorship of the Association of Casualty and Surety Companies, Accident Prevention Department, and of the International Association of Governmental Labor Officials.

framework, be electrically grounded according to the National Electrical Code, American Standard C1. It is also strongly recommended that a lockout-type switch be provided, so that the machine cannot be restarted while adjustments or repairs are being made. It is required that all noncurrent-carrying parts of portable electrically driven woodworking machinery, working at more than 90 volts to ground, be grounded through a ground wire in the power cord terminating in a grounding-type plug. All hand-held power woodworking tools (electrical or pneumatic) are now required to have a "dead man" type control to shut off the power as soon as the tool is released. This latter requirement was necessary because of the great speed and complex operation of some of the new tools. Several other provisions dealing with the location of controls were necessary because of the number of accidents associated with the bad location of the controls.

It is now required that all saws over 20 inches in diameter or operating over 10,000 peripheral feet per minute be prominently marked with their safe operating speed, and no saw shall be operated at a speed greater than this. When a marked saw is re-tensioned or altered for a different speed, the new speed will be prominently marked on the saw. This item required much discussion and research to determine the most equitable solution, and the change is believed to be a just answer to a very important problem without sacrificing life or limb. Various types of saw blades were studied, and it was determined that all provisions of the code apply equally to each type. Several new types of saw blades were studied, but as yet no saw blade has been developed for which an exception could be granted.

During the studies it was determined that the radial saw was a machine that required special treatment, and a subcommittee was appointed to study this problem. As a result of the subcommittee's findings, a new section was developed for radial saws. The various uses of this complex machine were studied, and each operation was covered by a safety provision. While the subcommittee was studying this machine, a new problem presented itself. It was discovered that, owing to the mounting of the saw close to its drive motor and the use of ball or roller bearings, the coasting time took on a very serious aspect. It was found that the saw blade would coast a considerable length of time (5 minutes was very common) after the power was cut off. Numerous accidents have already been caused directly or indirectly by this phenomenon. Manufacturers of these machines were contacted, and the committee, in concert with the manufacturers' engineers, was forced to admit that as yet there is no definite



Lumber *is being fed into planer in picture above. Knives, fingers, etc, are not visible because of the safety plate on face of machine. This plate protects the operator by making it impossible for her to put her hands into the machine. Since this picture was taken, company regulations require women to wear bandanas or hairnets. Below, latest type of dry kiln, with walkways. Correct lumber piling prevents shifting of lumber.*

remedy. There is a discussion of this problem in the appendix to the new edition, with a recommendation that some warning device be used to indicate the rotation. The manufacturers agreed to press their research on this problem to find a satisfactory solution as soon as possible.

In the study of lathes and specialty machines of the lathe type, it was found that more amplification was necessary. The new revision contains five new provisions, which should cut down the frequency and severity of accidents associated with these machines.

At the original meeting of the committee, it was determined that the cooperage machinery section of the code was no longer adequate, owing to changes in operation or lack of understanding of phraseology. A subcommittee was appointed and, after much research, rewrote the entire section. The revisions are so numerous that space considerations in this article prohibit exhaustive treatment. This section was so much improved that it is felt that, through this revision alone, many injuries will be prevented. Restrictions have been placed on the manufacturers and operators of these special machines, but all are justified by past experience.

Under the operating rules, more emphasis was placed on supervision. The importance of cleanliness in connection with the operation of guards and fire exposures was pointed out. It is also required that push sticks and blocks of various sizes and shapes be provided at each work place and their use enforced. Under the provisions for selection and training of operators, it is now required that all inexperienced workmen receive careful instruction and training before they are allowed to operate the machines.

Upon considering the many revisions in this code and the fact that many technological changes in materials and processes are taking place, the committee decided to remain organized and be available for consultation. Any inquiries are to be sent to the American Standards Association for ruling or amplification by the committee.

NEWS BRIEFS

• Vice Admiral G. F. Hussey, Jr, U.S. Navy (Ret), managing director of the American Standards Association, took office as president of the American Ordnance Association on January 1, 1955. Admiral Hussey was president of the Association's New York Post from 1950-1954. Admiral Hussey succeeds Lieutenant General Levin H. Campbell, Jr, USA (Ret), as president of the Association. Admiral Hussey was chief of the Navy Bureau of Ordnance and General Campbell was chief of Army Ordnance during World War II.

Admiral Hussey has been president of the United States Naval Academy Alumni Association since 1953.

• Dr I. C. Gardner, Chief of the Optics and Metrology Division of the National Bureau of Standards, and alternate representative on Sectional Committee Z58, Standards in Optics, has been awarded the 1954 Frederick Ives Medal for Distinguished Work in Optics. Presentation was made at the meeting of the Optical Society of America in Los Angeles in October, 1954. The citation commends Dr Gardner for his many scientific contributions in the field of applied and geometric optics. His work has covered photogrammetry, photographic objectives, design and construction of optical instruments, military optical devices, and testing of optical instruments.

• Members of the Board of Review for 1955 have now been elected. The Board acts under the authority of the ASA Standards Council on approval of standards and new projects. Members are Virgil M. Graham, Radio-Electronic-Television Manufacturers Association; L. W. Hill, Carolina Telephone and Telegraph Company; Harry E. Jordan, American Water Works Association; W. P. Kliment, Crane Company, Chicago, Illinois; Harold Massey, Gas Appliance Manufacturers Association; H. P. Seelye, The Detroit Edison Company; C. W. Franklin (alternate member), Consolidated Edison Company of New York.

• The United States, the United Kingdom, and Canada are again sending representatives to an "ABC Conference" to discuss possible unification of their national standards. The conference is being held April 11 through 15, 1955. Subjects to be taken up include screw thread gaging practices; extension of the unified screw thread standard to smaller sizes than those already approved; and surface finish.

• A new Turkish Standards Institution has just been organized with headquarters in Ankara. Necmi Tanyolac is Secretary General.

• Internationally agreed upon rules for short-circuit conditions for alternating-current circuit breakers have been published by the International Electrotechnical Commission. The rules are Chapter I of an IEC Specification for Alternating Current Circuit Breakers being prepared by IEC Technical Committee No. 17, Switchgear and Controlgear. Other chapters will cover rules for normal-load conditions (rules for temperature-rise and rules for operating conditions), rules for strength of insulation, rules for the selection of circuit breakers for service, and rules for the maintenance of circuit breakers in service.

The rules comprising Chapter I have been approved by the national standards bodies of 15 countries, and they are now recommended by IEC to the various countries for use in bringing about greater uniformity among the national standards of the various countries.

The subcommittee on power circuit breakers of ASA Sectional Committee C37 was the group which represented the United States viewpoint.

IEC Specification for Alternating Current Circuit-Breakers, No. 56-1, can be obtained from the American Standards Association at $4.00.

How to Keep Printing Presses Safe

Committee B65 offers Standards for Signals and control buttons to prevent accidents

by PETER J. BERNARD

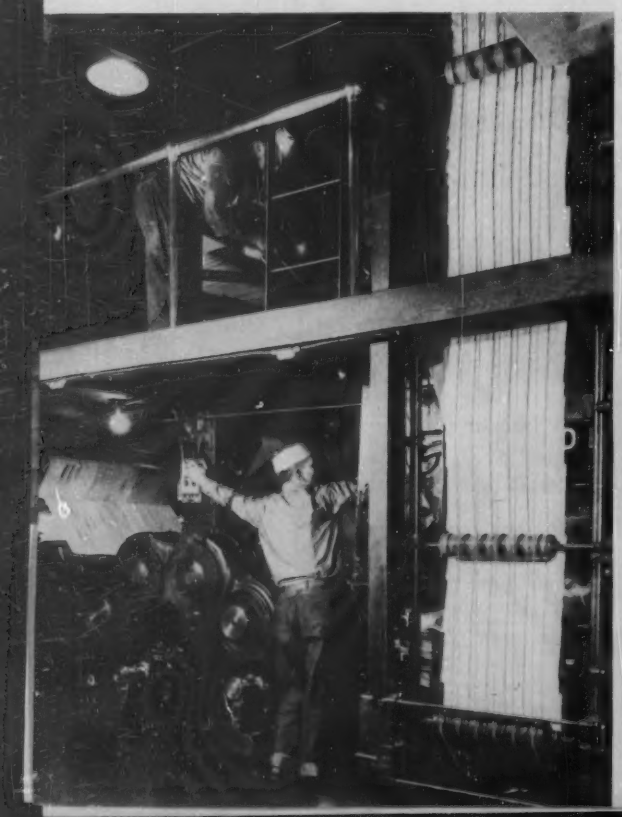
THE printing industry has for years been plagued with many avoidable injuries as well as some avoidable fatalities. These have been due to diversified equipment, design, and practice in stopping and starting, inching, and running printing presses and other graphic arts machines. Several years ago the seriousness of the situation was finally recognized by the Printing Industry of America and the Printing and Publishing Section of the National Safety Council. As a result, in April of 1953 a committee known as the B65 Sectional Committee was organized to study the problem and explore the possibility of developing a safety code for the industry to follow in operating printing presses.

This committee was composed of representatives of equipment manufacturers, electrical control manufacturers, industry research and trade associations, the National Safety Council, and labor unions. The Research and Engineering Council of the Graphic Arts and the National Safety Council agreed to sponsor this project under the procedure of the American Standards Association. Extensive research and study was done concerning button terminology, shapes and color, mechanical design of control stations, and the position, location, and different types of signaling systems.

To help expedite and guide the committee in its work, exhibit boards of all existing button control stations were furnished by General Electric, Cline Electric, Cutler Hammer, Harris - Seybold and Conde Nast Press.

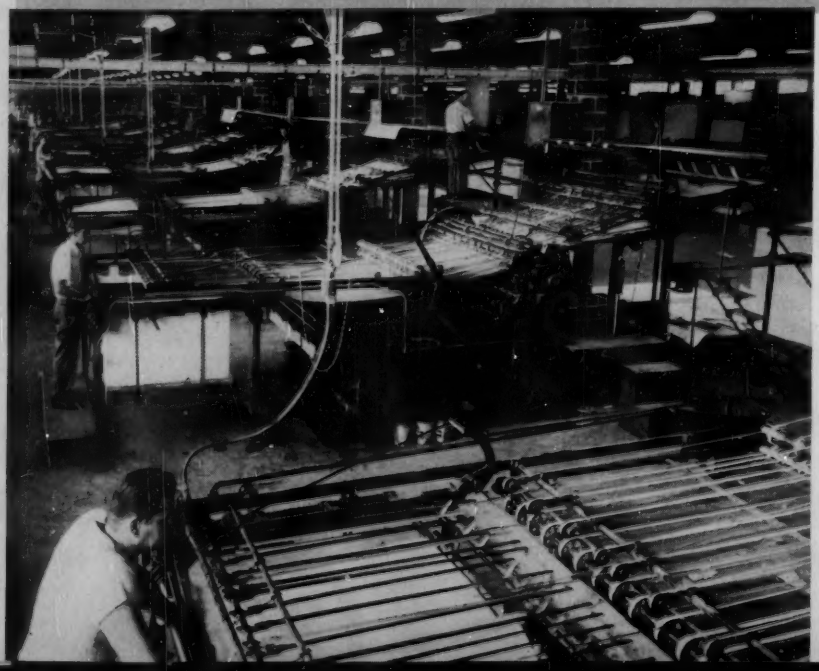
An analysis of typical accident cases showed that the vast majority of the injuries occurred on the commercial-type equipment. This type of equipment includes the sheet-fed presses and small web-fed presses generally equipped with single motor drives and used for comparatively small jobs and short runs. Publication presses, on the other hand, are large web-fed presses used for magazine, newspaper, rotogravure, and large catalog work. These presses are generally equipped with unit drives, two-motor drives, or group drives. One-third of the reported accidents involved the absence of a signal, and most of the others were due to pushing the wrong button.

Use of the standard just completed by the committee, and approved and published by the American Standards Association, will greatly reduce the accidents caused by mistaken operation of the wrong button. There is no more justification for a certain make press to have different controls and signals in Plants A and B than there is for any standard make car to have some of its clutch pedals on the right side and the brake pedal on the left. In an automobile this would only add confusion and result in accidents among the motoring public. Similarly, lack of standardization of push button control stations and signals on print-



These huge new automatic publication-type presses (left) are used by the New York Times. Operators of commercial-type presses, such as those below, can now be protected with the new "one-finger inch, two-finger run" controls.

H Wolff Manufacturing Co



On plywood model, James J. Cochran, Harris-Seybold Company (right) demonstrates electrical control that operates "one-finger inch; two-finger run" circuit.

Members of B65 committee inspecting plywood model are (left to right) Peter J. Bernard, chairman; Milton L. Priban, Cline Electric Manufacturing Company; Gerhart W. Heumann, General Electric Company; and W. H. Rouse, Cutler-Hammer, Inc. Standard positions for publication-type stations are (top to bottom) Safe; Ready; Faster; Slower; Inch; Stop—for commercial-type stations Stop; Inch; Run; Slow-fast; Reverse. Illustration shows different arrangements before code (left), and Standard position (right).

ing presses is confusing, wastes production time, and causes accidents.

The new standard, the American Standard Safety Code for Controls and Signaling Devices for Graphic Arts Presses, B65.1-1954, provides for uniform setup of the control buttons to prevent inadvertent errors. An unusual contribution is a new circuit known as the "one-finger inch, two-finger run." This outstanding safety feature was developed by a manufacturer of presses and a manufacturer of the circuits (see picture) and has been made available without charge to the industry, in the interest of accident prevention. The "one-finger inch, two-finger run" feature, as the name indicates, permits "inching" the press by depressing the "inch" button in the usual manner. But in order to start the press, it is necessary to depress both the "inch" and "run" buttons simultaneously, before the run operation can be obtained. Thus the new feature eliminates the need for a mechanical guard on the "run" button.

The committee was deeply concerned about finding a foolproof method of preventing the press from being started accidentally when it was to be inched. The accident records show that most injuries have occurred when the press was to be inched and when the "run" button was pushed instead. We feel we have found the nearest possible foolproof safety device in the new "two-finger run" system of operation.

Before this system was developed, we had studied the possibility of preventing such accidents by using buttons of various shapes. We tried to develop a "Braille" system of different forms of buttons which would be responsive to the sense of touch. We concluded the idea would be impractical both from an operations viewpoint and from that of long wear.

Terminology and button arrangement received considerable study.

We found there was a great deal of confusion in the use of terms "jog" and "inch" since both are used to designate short movements of a machine. Since "jog" is a term used in printing plants and book binderies for lining up sheets of paper, the committee agreed to standardize on the designation "inch" for the printing industry.

We found the term "emergency control stations" on publication-type equipment to be inaccurate from a safety viewpoint, as these stations would not function in an emergency in case of an accident. Before they could be used, these controls would require a transfer switching operation at the master control panel. We agreed that these emergency push-button stations should be identified as "stand-by control stations." The committee felt that by doing this it would eliminate the possibility that a pressman or crew member, in case of an accident, might run to a so-called "emergency station" to try and stop the press.

Signaling systems received a great deal of attention. Here again we found widespread non-uniformity. A compelling system of signals was agreed upon which could be audible, visual, or both.

The B65 Sectional Committee urges all printing firms to adopt this code as soon as possible. Purchasers of new equipment should indicate on their purchase orders that all push button stations and signaling devices shall be provided in accordance with American Standard Code B65.1-1954. Printers should also incorporate the new standard on existing equipment during any major change or overhaul of the electrical system.

This code, if widely accepted by the Printing Industry, will make a substantial contribution in reducing accidents as well as improved plant operations.

●

Mr Bernard is Director of Personnel and Safety, H. Wolff Book Manufacturing Company, Inc, New York. He is chairman of the Sectional Committee on Safety Code for Controls and Signaling Devices for Graphic Arts Presses, B65, and represents the Book Manufacturing Institute and the National Safety Council on the committee. He is General Chairman of the National Safety Council's Printing and Publishing Section.

USA's Part in International Meetings

THE United States, through the American Standards Association, took part in a number of international meetings during the Fall of 1954, in addition to the Golden Jubilee of the International Electrotechnical Commission at Philadelphia in September, 1954.

Cyril Ainsworth, ASA's Technical Director, attending the meeting of the Council of the International Organization for Standardization at Geneva, Switzerland. At that meeting, the Council cleared a number of recommendations from ISO technical committees which are now to be referred to the ISO Member Bodies for final action. It acted on approval of ISO Recommendations on pipe threads for gas list tubes and screwed fittings, on transliteration of cyrillic characters for the guidance of libraries and publishers, and on layout of periodicals to guide publishers in providing data needed for reference. It also made a number of decisions on administrative problems. One of these clears the way for use in technical committees of languages other than English, French, or Russian. The purpose is to permit technical experts to present their recommendations in their own language when this seems advisable. This will be done only when there is unanimous consent of the committee members and when adequate interpretation is available.

The Council also acted to set up a coordinating committee on atmospheric conditioning for testing. This committee will consist of one representative each from all ISO technical committee secretariats interested in this subject. The French standards body will hold the secretariat. Close liaison will be maintained with IEC Technical Committee 12-3.

A number of ISO technical committees held meetings last fall. Reports of three of these—plastics, colorfastness of textiles, and mica—are published here.[1] USA delegates were also present at meetings of the Technical Committees on lac, on terminology, and on surface finishes and manganese. The USSR holds the secretariat for these last two committees, and their meetings were held in Russia.

The American Standard Safety Color Code was given favorable consideration by TC 80 at a meet-

[1] Plastics, page 47; colorfastness of textiles, page 44; mica, page 46.

ISO Council at meeting September 29, 1954, Geneva, Switzerland.

1. R. Marechal, ISO staff; 2. Dr Lal Verman, India (ISO Vice-President); 3. Dr H. Tornebohm, Switzerland (ISO President); 4. W. Ruggaber, Switzerland (ISO Treasurer); 5. F. Carreira, Portugal; 6. H. St Leger, ISO General Secretary; 7. G. P. Budiakov, USSR; 8. R. E. Jamieson, Canada; 9. Cyril Ainsworth, USA; 10. H. A. R. Binney, United Kingdom; 11. J. Birle, France; 12. General P. Salmon, France; 13. Dr A. Zingen; 14. A. Willberg; 15. R. Tavernier, France; 16. E. Wegelius, Finland; 17. W. Rambal, ISO Staff; 18. W. Kuert, Switzerland; 19. A. Abaza, Russian interpreter; 20. I. G. Kourakov, USSR. 21. Mrs N. Roulier, interpreter. 22. Mrs J. Gehriger, technical secretary. Other women in the picture are secretaries and stenotypists.

ing at The Hague in October.

Upon request of American industry, ASA has become an actively participating member in the projects on Agricultural Machinery, TC 23, and on Agricultural Tractors, TC 22T. E. W. Tanqueray, International Harvester Company, represented the USA at a meeting of TC 23 in Portugal last fall.

Recently, ASA approved Draft ISO Recommendation No. 22, Identification of Medical Gas Cylinders. The American Hospital Association and the American Society of Anesthesiologists, joint sponsors of Simplified Practice Recommendation R176-41, Color Marking for Anesthetic Gas Cylinders, have been asked to consider revising this SPR so as to bring it into harmony with the new ISO Recommendation No. 22.

Now before U.S. industry for action are draft ISO Recommendations on a number of aircraft parts. Standardization of these will contribute to greater safety in international operation of airplanes, it is believed. The drafts cover aircraft jacking pads, aircraft fuel nozzle grounding plug and socket, toilet flushing and draining connections, direction of operation of toggle switches, and pressure refueling connections. Also before U.S. groups are a guide to the use of preferred numbers, Draft

CALENDAR OF MEETINGS

Subject	*International Organization for Standardization*	*Place*	*Date of Meetings*
			March
Small tools	29	Paris	24-26
Machine tools	39	London	29-31
			April
Standardization in the sphere of banking	68	Paris	25-27
			May
Accumulators	IEC/TC 21	Paris	3-5
Safety colors/Definition of safety colors	80/SC 1	The Hague	10-11
			June
Petroleum products	28	London	23-24

MEETINGS PLANNED

(Final dates not yet decided)

Aromatic hydrocarbons	78		Spring
			May
Ball and roller bearings	4	Madrid	9-11
Aircraft	20	Genoa	10-12
Documentation/Documentary reproduction	46/SC 1		June
			June
ISO Council Meeting		Stockholm	11-15
ISO General Assembly		Stockholm	17-18
Screw threads	1		
Limits and Fits	3		
Pipes and fittings	5		
Drawings (general principles)	10		
Steel	17	Stockholm	6-16
Solid mineral fuels	27		
Cinematrography	36		
Photography	42		
Welding	44		
Gas cylinders	58		
Quantities, units, symbols, conversion factors, and conversion tables	12	Copenhagen	20-24
IEC General meeting		London	June 28-July 8
Textiles	38/SC 7	Brussels	July
			July
Plastics	61	Paris	11-15
Textile machinery and accessories	72	Brussels	July
Textiles/Systematic reduction of the number of cloth widths	38/SC 3	Brussels	July
Unification of boiler codes	11	Madrid	November
Small tools	29		Autumn

ISO Technical Committee 50, Lac, met at London, October 11-13. (secretariat, India). At head table, Dr H. N. Glass, UK; G. Weston, UK; Dr Lal Verman, India; Shri H. M. Patel, secretary to Government of India in the Ministry of Food and Agriculture, chairman; Shri J. P. Morotra, India, and R. K. Thomas, UK, joint secretaries. Mlle Krikart, interpreter. USA delegation is at extreme left of picture (starting nearest camera, right to left)

participating in 2½ times as many ISO Recommendation No. 8; ball and roller bearings, Draft ISO Recommendation No. 39; a draft proposal on hemp, manila, and sisal ropes; and a request for information concerning the sizes of filter mesh in transfusion equipment filters for medical use.

For a list of meetings scheduled by ISO technical committees, the General Assembly, and ISO Council, see chart above.

The United States now ranks thirteenth in degree of participation in international standards work among the national standards organizations of the 35 nations that are members of the International Organization for Standardization.

France leads the United States in international standards work by

The American Standards Association holds the secretariat for eight ISO technical committees and for five subcommittees:

Unification of Boiler Codes, TC 11
Copper and Copper Alloys, TC 26
Petroleum Products, TC 28
Cinematography, TC 36
Photography, TC 42
Plastics, TC 61
Determination of Viscosity, TC 66
Material for Pipe Lines and Other Fixed Installations in the Field of the Petroleum Industry, TC 67
Tapered Roller Bearings, TC 4/SC 2
Colorfastness Test, TC 38/SC 1 (secretariat shared with UK)
Shrinkage of Fabric in Washing, TC 38/SC 2
Yarn Testing, TC 38/SC 5
Color Identification of Gas Cylinders, TC 5/SC 1

participating in 2½ times as many ISO committees as does this country. The French Standards Association takes part in 79 of the 80 committees of the International Organization for Standardization.

The United Kingdom, which participates in the work of 72 committees, leads in the number for which it serves as the secretariat nation. It heads 18 committees.

Other countries with heavy participation in standards work are the Netherlands (75 committees), Germany (71), Italy (60), and Belgium (57). Russia's participation in the work is 15 percent over that of the United States.

Last year ASA was eighteenth among the 34 nations involved in international standards work. This year ASA moved to the thirteenth place.

International standards are being written. Other countries are selling good that comply with these standards, because they are effectively getting their own viewpoints into these standards. The ISO is the ideal instrument through which American industry can participate in making these standards. The free interchange of information among technical peers lets U.S. business know precisely what other countries are doing and affords an opportunity to urge the validity of American ideas and methods.

International Methods for Testing Colorfastness of Textiles

by Wm. D. Appel

Chief, Textiles Section, National Bureau of Standards, Washington 25, D.C.; chairman, ASA Sectional Committee L23, American Committee on ISO/TC 38, Textiles.

ONE of the most active subcommittees in the international work on textiles is that on methods for testing colorfastness. This subcommittee of the International Organization for Standardization (ISO), Technical Committee 38 on Textiles, was appointed in 1948. The ground was laid for its work at meetings in Bournemouth, England, in 1951, and at New York in 1952.

The third meeting of the subcommittee was held in Scarborough, England, June 4 through 7, 1954. It resulted in approval by the subcommittee of 24 methods, tentative approval of 13 others, and agreement to continue study of 2 additional methods. The meeting was attended by 45 delegates from 13 countries: Belgium, Canada, Czechoslovakia, Denmark, France, Germany, India, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom, and the United States. The USA was represented by the following: L. S. Little (leader of the delegation), Textile Consultant, New York; W. D. Appel, Chief, Textile Section, Organic and Fibrous Materials Division, National Bureau of Standards, Washington, D.C.; H. D. Donaldson, Cluett Peabody & Company, Inc, Troy, New York; Werner Klaas, Testfabrics Inc, New York; Dr E. W. K. Schwarz, Consultant, New York; and J. A. Woodruff, American Viscose Corporation, Marcus Hook, Pa.

The rapid advance in the work may be credited to the American Association of Textile Chemists and Colorists, the British Society of Dyers and Colourists, and the European Continental Fastness Committee,[1] leaders in the field in their respective regions. They have not only carried on research to establish the best possible colorfastness tests, but have also been willing to pool their experience in arriving at test methods that would serve the needs of all participating countries. The subcommittee secretariat is held jointly by the American Standards Association and the British Standards Institution, the official members of ISO/TC 38 from these countries.

The agreement on most of the methods was reached with only minor revisions and editorial changes in the drafts published in 1953.[2] This was not true for colorfastness to light, however. The delegates from the USA and Canada favored the laboratory carbon-arc lamp (Fade-Ometer) test because of its speed, duplicability, and convenience. The delegates from the UK and continental countries favored the daylight test method which has been used for many years. After extensive discussion of the advantages and deficiencies of these methods, the daylight method was approved. The series of blue dyeings developed by the Continental Committee will be specified as reference standards for use in this test. The American proposal to establish another test method based upon the carbon-arc lamp was left open for further study.

Further work on tests for colorfastness to perspiration was considered necessary because present methods do not always lead to correct results with cotton textiles dyed

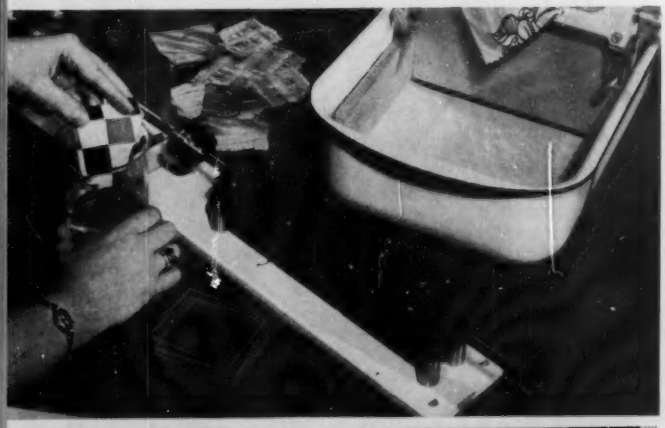
[1] Groupement d'Etudes Continental Européen pour la Solidité des Teintures et Impressions.

[2] Tests for colorfastness of textiles under consideration in the International Organization for Standardization. *American Dyestuff Reporter*, **42**, No. 26, P871-P887 (December 21, 1953).

with coloring matters in which copper is present. This objection is expected to be met by introducing the amino acid histidine in the artificial perspiration solution. The method for gas fading also needed further work.

The test method for a mild hand washing was approved, and the subcommittee agreed upon the use of a mechanical device such as the Launder-Ometer for testing colorfastness to launderings of different degrees of severity. The details of three additional test methods are to be considered before the next meeting.

In accordance with ISO procedures, the methods approved by the subcommittee will be circulated as Draft ISO Proposals to the Member Bodies of ISO/TC 38. When accepted by a majority of the participating Member Bodies, they will be submitted to the main Technical Committee, ISO/TC 38, for adoption as Draft ISO Recommendations. Following that, approval by a majority of all ISO Member Bodies and acceptance by the ISO Council will make them official "Recommendations" of ISO and may well lead eventually to their establishment as national standards in each of the 33 member countries. If no Member Body objects, an ISO Recommendation may become an ISO Standard.



Some methods used in USA for testing colorfastness of textiles—

Perspirometer is being set up here to test effects of perspiration on colored dress fabrics. Further work is needed for development of international recommendations.

Launder-Ometer method for testing colorfastness to washing was approved by ISO committee.

This crockmeter is used to test colorfastness to crocking (rubbing)

Test Methods on Colorfastness of Textiles Approved by ISO Subcommittee, June 1954

General Principles of Testing
Gray Scale for Evaluating Change in Color
Gray Scale for Evaluating Staining
Acid spotting
Alkali spotting
Bleaching, hypochlorite
Bleaching, peroxide
Carbonizing with aluminum chloride
Carbonizing with sulfuric acid
Chlorination, acid
Light, daylight
Mercerizing
Metals in the dye bath: chromium salts
Metals in the dye bath: iron and copper
Organic solvents
Potting
Pressing: hot pressing
Rubbing
Soda boiling
Stoving
Washing: handwashing
Water
Sea water
Water spotting

Test Methods Tentatively Approved

Alkaline milling
Acid planking
Acid milling: mild
Cross-dyeing: wool
Decatizing
Chlorinated water
Degumming
Steaming
Sublimation
Bleaching with sodium chlorite
Washing: mechanical washing at 60 C
Washing: mechanical washing at 95 C
Washing in the presence of sodium hypochlorite

Test Methods Held for Further Study

Perspiration
Gas fumes

Test Method Withdrawn

A test method for colorfastness to anti-crease processing was withdrawn when it was found that such processing is too variable to be covered by a single test.

International Mica Committee Makes Progress

by G. A. PURCELL

Mr Purcell is Mica Consultant to the Federal Supply Service, General Services Administration, and was chief of the USA delegation to the meeting of ISO/TC 56 on Mica at Paris, France, October 21 and 22, 1954.

●

DELEGATIONS from India, the United Kingdom, France, and the United States were present at the meeting of ISO Technical Committee 56 at the Modern Palace Hotel, Paris, France, October 21 and 22, 1954.

The committee discussed changes suggested by the various member bodies concerning proposed recommendations under consideration. These were a proposal for grading and classification of processed muscovite mica and proposed specifications for processed phlogopite mica.

Many of the changes suggested were of an editorial nature and were quickly disposed of. Others were more basic.

The USA delegation, representing the American Standards Association as the ISO member-body, had submitted standard samples of the various qualities of block mica. It was hoped that these would form the basis for master standard samples. The United Kingdom delegation, however, was opposed to setting up master samples at this time as it felt that this project required further time for study. The United Kingdom delegation agreed to submit new proposals on this subject for future consideration.

Recognizing the technological changes that have taken place since the committee met in New York in 1952, the committee adopted the Table of Qualities of Muscovite Mica Splittings proposed by the U.S. delegation on behalf of the National Electrical Manufacturers Association. The committee adopted the table with certain modifications tending to improve the quality of mica splittings.

The need to improve the quality of mica splittings was strongly stressed by the delegations representing the consumer countries, with particular emphasis upon elimination of "V" cuts in Book-Form splittings. The Indian delegation, representing the producers, agreed to the changes, subject to the approval of its member bodies.

The U.S. delegation also submitted on behalf of NEMA a Table of Qualities of Phlogopite Splittings. Since this proposal was made informally, no action was taken pending a study of the subject by the French delegation.

A specification for "Third Quality" mica film was adopted which conforms to the designation in the American Society for Testing Materials specification, ASTM D 351-53T.

The committee requested the American Standards Association to submit proposals on "Electrical Classification of Mica" and on "Sampling Procedure for Mica" for future consideration.

Mica mining in India

ISO Plastic Committee Meets

A heavy program of work that has brought near completion a number of proposed international recommendations on terminology and test methods for plastics was carried on by representatives of ten countries at Brighton, England, October 4-8, 1954.

The occasion was a meeting of Technical Committee 61 on Plastics of the International Organization for Standardization. Some 30 countries are represented in the membership of TC 61, with the American Standards Association, as USA member-body, holding the secretariat.

Dr Gordon M. Kline, National Bureau of Standards, Washington, D.C., served as co-chairman of the Brighton meeting, with H. V. Potter, Bakelite, Limited, London, sharing the chairmanship. H. T. Lawrence of the British Standards Institution, and C. L. Condit, Technical Secretary of the Society of the Plastics Industry, New York, acted as co-secretaries.

Observers from the International Electrotechnical Commission and from the Union of Pure and Applied Chemistry sat in on the meeting.

Dr Kline's report of the meeting, originally published in the December issue of *Modern Plastics*, follows:

Report on ISO/TC 61

by **Dr Gordon M. Kline**

The meeting of ISO/TC 61 in Brighton was concerned with the international standardization of testing methods and nomenclature. It was attended by 57 delegates from 10 countries, as follows: Belgium 2, France 7, Germany 6, India 3, Italy 5, the Netherlands 4, Sweden 6, Switzerland 1, United Kingdom 14, and United States 9. The U.S. delegation consisted of Robert Burns (Leader), Bell Telephone Laboratories; C. Ainsworth, American Standards Association; C. Condit, Society of the Plastics Industry; L. Gilman, Picatinny Arsenal; G. M. Kline, National Bureau of Standards; R. R. Winans, Brooklyn Navy Yard; R. K. Witt, Johns Hopkins University; E. Y. Wolford, Koppers Co; and W. A. Zinzow, Bakelite Co . . .

Another milestone in the work of this committee was reached when the Plenary Session on October 8 approved five test methods as Draft ISO Recommendations. These relate to the determination of water absorption, apparent densities of molding powders pourable and nonpourable from a funnel, acetone soluble matter in phenolic moldings, and the problem of temperature of deflection under load.

In addition, eight items were approved for circulation as Draft ISO Proposals. These pertained to a glossary of equivalent terms in English and French, determination of flexural properties of rigid plastics, standard conditioning of plastics prior to testing, standard laboratory atmospheres for testing plastics, determination of free phenols and of ammonia in phenol-formaldehyde moldings, determination of percentage of methanol soluble matter in polystyrene, and the investigation of boiling water absorption characteristics of plastics.

Many other testing methods are being drafted by the six working groups, each of which held three or more sessions during the week. These working groups are dealing with nomenclature, mechanical strength properties, thermal properties, physical chemical properties, chemical and environmental resistance, and testing and conditioning atmospheres.

The committee voted to submit a proposed modification of the scope of its work to the national member bodies for approval. The new scope would include work on specifications as well as the present assignments on testing procedures and nomenclature. Resolutions proposing cooperation with ISO/TC 5 (Pipes) on the preparation of standards for plastics pipes and with IEC/TC 15 on electrical test methods were also adopted. The cooperation with the latter committee of the International Electrotechnical Commission will be implemented by the formation of a working group to review the electrical test methods prepared by IEC/TC 15 and comments received from ISO member bodies and to prepare recommendations for consideration by ISO/TC 61 and IEC/TC 15 regarding the adequacy of the methods for testing plastics. It was also decided that a new working group on the preparation of test specimens is also to be organized.

The British Standards Institution and the British Plastics Federation were hosts at a dinner for the delegates on October 7. Brief talks were given by Sir Roger Duncalfe, President of the BSI; A. E. Skan, Chairman of the BPF; J. E. Hay, Deputy Mayor of Brighton; H. V. Potter; and G. M. Kline.

The 1955 meeting of ISO/TC 61 will be held in Paris, July 11-15.

WORLD PRODUCTION OF PLASTICS

Year	World tons	U.S. Total tons	U.S. Percent	Germany Total tons	Germany Percent
1939	300,000	100,000	33⅓	100,000	33⅓
1944	600,000	330,000	55	250,000	42
1950	1,500,000	1,030,000	68.5	100,000 West	6.7
				30,000 East	2.0
1951	1,800,000	1,160,000	64.5	170,000 West	9.5
				35,000 East	2.0
1952	1,800,000	1,110,000	62	190,000 West	10.5
				45,000 East	2.5
1953	2,100,000	1,320,000	63	240,000 West	11.5
				60,000 East	2.85

How U. S. Delegates Rate International Meetings

A BACKWARD glance at the meetings of the International Electrotechnical Commission at Philadelphia reveals that in retrospect USA representatives see the meetings as unusually rewarding. This has been shown in reports now available from the technical committees and from the USA delegations that attended the meeting. Reports of some of the technical accomplishments have already been published in detail in electrical magazines[1] and have been given in general in THE MAGAZINE OF STANDARDS (Oct 1954, page 371). Following are more detailed reports of the accomplishments of the technical committees at the Philadelphia meeting.

With remarkable unanimity, the USA delegations report that—

". . . the meetings were well attended and a large amount of work was accomplished. . . ."

". . . an understanding of viewpoints and agreement on technical methods or details can be reached in meetings where there is opportunity for face-to-face discussions."

". . . there was evidence of great sincerity of purpose and also of a willingness to give consideration to the specific problems of the countries represented. . . ."

". . . a fine spirit of cooperation and a surprisingly large amount of standardization work was accomplished. . . ."

". . . deeply impressed with high level of technical competence of delegates representing other nations . . . ready willingness to accept proposals of sound technical merit. . . ."

". . . enjoyed meeting foreign delegates and discussing matters of mutual interest. . . ."

". . . amazed at the mass of preparation that had gone into this work. . . ."

". . . meetings were fruitful technically and created appreciable good will among the international participants. . . ."

". . . direct association with delegates from other countries makes for a far better understanding of one another's problems. Reasons for positions on controversial points became apparent. . . ."

As one delegate put it: "The delegates came to Philadelphia determined to agree, and they set about their task directly. They wasted no time in argument to promote selfish views. Rather, they explained their ideas with care and listened sympathetically to the others. When all conflicting opinions were understood, one of them would stand out clearly as the best, and be adopted for the common good. This is not negotiation. It is cooperation in the truest sense."

Technical Committee No. 1. Nomenclature.

Chairman, **General E. E. Wiener.** *Secretariat, France.*

Work is going forward on a revision of the International Electrotechnical Vocabulary. Three preparatory subcommittees met at Philadelphia to review and revise preliminary drafts of the sections on electrochemistry and electrometallurgy; radiology; and electrobiology. The U.S. National Committee was responsible for the initial draft of these three groups. Actual work was done by subcommittees of ASA Sectional Committee C42 on Definitions of Electrical Terms.—*Chester L. Dawes, Chairman, USA delegation.*

Technical Committee No. 2. Rotating Machinery.

Chairman, **C. A. Martin.** *Secretariat, United Kingdom.*

Subcommittee 2B, Dimensions of Motors. Delegates from 11 countries attended the meeting of this subcommittee which was informal and had no specific decisions scheduled. However, the meeting afforded an opportunity for many delegates from other countries to discuss this subject with U.S. motor manufacturers and users. The meeting was useful in giving the various delegates a better understanding of the two series of dimensions now shown in the committee report.

Subcommittee 2C, Classification of Insulating Materials.

Chairman, **J. H. C. Spinks.** *Secretariat, United Kingdom.*

A revised version of the Recommendations for the Classification of Insulating Materials is to be prepared by the secretariat for circulation. The U.S. National Committee will soon submit a revised edition of the Test Procedure for evaluation of systems of insulating materials for random-wound electric machinery.—*E. B. Paxton, Chairman, USA delegation.*

Technical Committee No. 4. Hydraulic Turbines.

Chairman, **S. Logan Kerr.** *Secretariat, USA.*

This was the committee's first meeting in many years. More than 30 representatives from nine different countries attended.

There was a cordial exchange of ideas among the various delegations and much interest shown in the methods of measuring the water discharge of hydroelectric plants as used in the US and Canada. Two technical sessions were devoted to this subject and several formal resolutions were adopted. The basic decision was that an International Test Code for Hydroelectric Plants should be prepared and adopted at the earliest opportunity.

Further meetings of TC 4 are being planned in London during 1955, and in Munich, Germany, in 1956.—*S. Logan Kerr, chairman, USA delegation.*

[1] International Standards for Insulation, Motors, Components, *Electrical Manufacturing,* November, 1954.

Technical Committee No. 5. Steam Turbines.[2]

Chairman, **B. Pochobradsky.**
Secretariat, USA.

Representatives of Great Britain, France, West Germany, Switzerland, Sweden, Italy, Canada, and the United States held a successful series of meetings. A marked cooperative spirit prevailed in all discussions which led to the final approval of international specifications for the purchase of steam turbines. A draft of new International Rules for Acceptance Tests of Steam Turbines and its appendices was thoroughly discussed. A new draft is being prepared on the basis of the constructive recommendations made at the meetings.—*A. G. Christie, chairman, USA delegation.*

Technical Committee No. 7. Aluminum.

Chairman, **C. H. E. Ridpath.**
Secretariat, Canada.

Adoption of an international annealed aluminum standard was agreed upon, and progress was made in the direction of agreement both on a standard for hard drawn aluminum wire of the electrical conductor grade and for steel wire for the core of aluminum cable, steel reinforced. This was especially gratifying since these questions have been under discussion for upwards of 20 years. —*P. V. Faragher, chairman, USA delegation.*

Technical Committee No. 8. Standard Voltages, Current Ratings and Frequencies.

Chairman, **H. Puppikofer.**
Secretariat, Italy.

International standardization must be a rather slow process because of the great diversity of interests to be considered. Definite progress was made in each of the subjects considered and groundwork laid for further development. These included standard system voltages, nominal system voltages, equipment for voltages above 1 kv, and equipment for voltages between 100 and 1,000 volts, and standards frequencies. A table of standard frequencies for different applications prepared by TC 8 will be circulated to the national committees for comment.—*Howard P. Seelye, chairman, USA delegation.*

[2] For a detailed report on this work, see "Development of World-Wide Turbine Standards" by B. C. Thorn, *Standards for a Strong America,* p 43. (American Standards Association, 70 E. 45 Street, New York 17, N.Y. $3.00)

Delegates from 7 countries attended this meeting of the International Mixed Committee on Electric Traction Equipment. They represented IEC/TC 9; manufacturers of electrical equipment used in railways; and the International Union of Railways.

Officers and chief delegates, Subcommittee 2C, Classification of Insulating Materials. Standing, left to right, Kenneth N. Mathes, USA; E. W. Lund, Denmark; Ronald Snadow, UK; Rolland David, France; Dr Gerard de Senarclens, Switzerland; Hans Hedstrom, Sweden; E. A. Frowein, Holland; E. W. Henderson, Canada. Seated, C. A. Martin, UK (Chairman of TC 2); J. H. C. Spinks, UK (Chairman of SC 2C); Peter Bingley, UK (Secretary of SC 2C).

Technical Committee No. 9. Electric Traction Equipment and CMT.

Chairman, **Dr M. Semenza.**
Secretariat, France.

Approval was given to publication of the third edition of the rules for electric traction motors, IEC Publication No. 48, as well as the first edition of the specification for electrical equipment installed on motor vehicles. Progress is also being made on rules for auxiliary machines on motor vehicles. Every one of the USA delegates expressed the feeling that the meetings were well worth while and he was glad he had had the opportunity to attend. There is a sense of appreciation among the Americans of the increasing part our country must play in world affairs. —*John C. Aydelott, chairman, USA delegation.*

Technical Committee No. 12. Radio-Communication.[3]

Chairman, **P. Besson.** *Secretariat, Netherlands.*

Technical Committee 12 and all its subcommittees met during the Philadelphia meeting. The committee decided to circulate eight proposed recommendations for approval under the Six Months' Rule on such subjects as recommended methods of measurement of receivers for

[3] For a detailed report on this work, see "Components for Electrical Circuits," by Leon Podolsky, *Standards for a Strong America,* p 35 (American Standards Association, 70 E. 45 Street, New York 17, N.Y. $3.00)

FM broadcast transmissions; safety requirements for mains-operated TV receivers; gramophone motors; adjustment of voltage without the aid of tools; a color code for ceramic dielectric capacitors; aluminum electrolytic capacitors for general purpose application; and characteristic impedances and dimensions of rf coaxial cables. Other recommendations circulated for approval cover fixed paper dielectric capacitors and a color code for tubular paper capacitors. A new subcommittee for radio transmitters was established.

The substantial amount of work accomplished and completion of work on standards to be circulated for international approval under the Six Months' Rule are testimony to the very effective cooperation exhibited by all delegations.—*Leon Podolsky, co-chairman, USA delegation.*

These meetings afforded a much needed opportunity for American engineers to become acquainted with international standards work and to exchange ideas with European engineers. The interest stimulated will inevitably result in closer cooperation to the benefit of all nations concerned.—*L. G. Cumming, co-chairman, USA delegation.*

Technical Committee No. 15. Insulating Materials.[4]

Chairman, **Dr R. Vieweg.**
Secertariat, Italy.

Seven working groups were set up on dielectric strength test methods; volume and surface resistivity and insulation resistance test methods; tracking test methods; voltage endurance test methods; "encyclopedia" of insulation materials; dissipation factor and dielectric constant test methods; and thermal stability test methods. Not only was considerable progress made, but a basis was established for even greater accomplishments in the future.—*Arnold H. Scott, chairman, USA delegation.*

[4] For a detailed report on this work, see "Organization and Work of the IEC on Electrical Insulation Material," by Dr A. H. Scott, *Standards for a Strong America,* p 38 (American Standards Association, 70 E. 45 Street, New York 17, N.Y. $3.00)

Technical Committee No. 17. Switchgear and Controlgear.[5]

Chairman, **Professor G. de Zoeten.**
Secretariat, Sweden.

The Philadelphia meetings were attended by delegates from 14 countries. U.S. delegates and observers numbered over 35, representing, almost equally, users and manufacturers. It was the consensus of these U.S. delegates that the meetings made outstanding contributions to international understanding in standardization of switchgear and controlgear.

The work to date on high-voltage switchgear consists of five chapters of a standard on power circuit breakers. These are: Method of Rating, Normal Load Conditions, Strength of Insulation, Selection, and Maintenance. Work is just starting on high-voltage disconnection switches.

A standard on fuses below 1000 volts has been completed and published, and work has been started on fuses for application above 1000 volts.

Work has just begun on low-voltage switchgear and controlgear. This initial document was discussed at the Philadelphia meeting in September. The subjects of switchgears and controlgears are handled by separate groups in the United States, and we are trying to convince the other countries to do likewise in the IEC because of the very great differences in the characteristics and application of these products.

Delegates from other countries seemed especially gratified at the active role which the United States has assumed in the work of IEC. This feeling was greatly enhanced by the special presentation of the AIEE Switchgear Committee's proposal, A New and Simplified Method of Rating Power Circuit Breakers. It was pointed out that this proposal was still in the working stage and was not yet being formally offered to the IEC. The purpose of the presentation was to obtain information, comments, and suggestions from IEC members. As a result of this presentation and discussion, it is felt that IEC will give the new proposal serious consideration as a basis for future international standards on this subject when it is finally presented to them.—*U. L. Cox, chairman, USA delegation.*

[5] For a detailed report on this work, see "Progress in Power Switchgear," by V. L. Cox, p 40 *Standards for a Strong America* (American Standards Association, 70 E. 45 Street, New York 17, N.Y. $3.00)

Technical Committee No. 18. Electrical Installation in Ships.

Chairman, **G. O. Watson.**
Secretariat, Netherlands.

The U.S. delegation, consisting of members of the AIEE Marine Transportation Committee, felt that the meetings were not only successful but also interesting and informative.

The proposed text for the first edition of a document on this subject, started in 1948, was unanimously adopted by all delegates. Before publication, however, this document will have to be approved by the various National Committees under the Six Months' Rule. We believe that as a first step it is important to know the minimum standards that will be supported by all countries. It is hoped that by the exchange of views and experiences made possible by these meetings the standard of electrical installations on shipboard will be constantly improved. — *Arthur R. Gatewood, chairman, USA delegation.*

Technical Committee No. 19. Internal Combustion Engines.

Chairman, **P. Diserens.**
Secretariat, USA.

This was the first meeting of this committee since 1938. Therefore, the discussions were limited to general principles.

Technical Committee No. 20. Electric Cables.

Chairman, **P. V. Hunter.**
Secretariat, United Kingdom.

This meeting was helpful to the American delegates in giving them an opportunity to exchange views with the delegates from other countries on specification requirements

for the purchase of paper-insulated power cables up to 275-kv operation. This was the first opportunity we had had to discuss these specifications with representatives of other countries. There was a difference in viewpoint as to some of the test requirements; but, as a whole, our respective views were not too far apart. We look forward to further meetings.—*R. J. Wiseman, chairman, USA delegation.*

Technical Committee No. 22. Power Converting Equipment.

Chairman, **L. W. Morton.**
Secretariat, Switzerland.

The principal work of the delegations to Technical Committees 22 and 22-1 had to do with the completion of International Recommendations for Mercury-Arc Rectifiers. This work had been under way since 1937, but had nearly reached a stalemate because of differences between American and European mercury-arc power rectifier design and operating practices. Therefore, the meetings opened with an atmosphere of slight mutual suspicion as to each other's motives and objectives.

These suspicions were almost immediately dispelled when at once it became evident that a common objective of all of the delegates was to complete the work on the international recommendations for mercury-arc rectifiers at the Philadelphia Jubilee Meeting.

The rest of the delegates listened patiently as each nation outlined its own needs as determined by its established design and operating practices. After these were clearly understood, it was not difficult to formulate international recommendations which took all of these particular needs into account.

Thus the meetings of Technical Committees 22 and 22-1 can be regarded as successful, for at their conclusion, the delegates of all nations agreed to the Draft of International Recommendations for the Mercury-Arc Rectifiers as revised at Philadelphia. The key to this success was patient examination of the needs of each nation and then the formulation of a pattern of recommendations that fitted the needs and objectives of all.

These sessions were also of value for other reasons. Among the delegates, in addition to the usual number of vitally interested electrical manufacturers' representatives, there were several rectifier users, both from Europe and America. The meetings gave these users an opportunity to describe clearly operating practices on both sides of the Atlantic. This shed new light for all to see on problems of users. Both users' and manufacturers' representatives thus obtained valuable impressions and information relating to the design and operation of mercury-arc rectifiers all over the world that could be obtained in no other way.

New ideas generated by these international discussions will no doubt be put to use on both sides of the Atlantic. Such meetings will tend to draw us closer together in thought and practice as the years go by.

Technical Committee No. 24. Electric and Magnetic Magnitudes and Units.

Chairman, **Dr J. J. Smith.**
Secretariat, France.

The USA delegation was very happy about the agreements reached in these meetings. The subject of rationalization of electromagnetic units has been discussed in a long and tortuous sequence of meetings. These meetings have been characterized by many misunderstandings. We were able to iron out a large number of these misunderstandings and reach recommendations which are a major step in international understanding.

Decisions on a number of terms are being submitted to the National

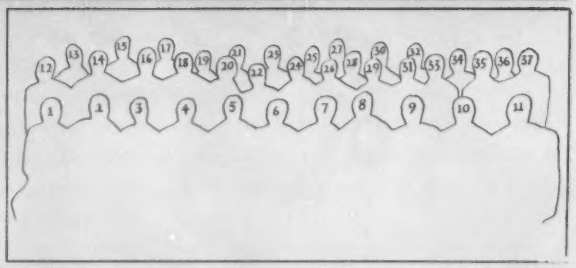
Philadelphia's Mayor Joseph S. Clark, Jr, (center in picture at right) with Dr Tornebohm, ISO President (left) and Dr H. S. Osborne, IEC President. Below, (left to right) Mrs H. S. Osborne; Mrs R. C. Sogge; Mrs G. F. Hussey, Jr; Mrs Philip Chase, who helped see that wives and daughters of IEC delegates enjoyed their stay in Philadelphia. Dr Gaylord P. Harnwell, President of the University of Pennsylvania (left in picture at right below) with Dr Comfort Adams (center) and Richard C. Sogge. Dr Adams presented a paper at 1904 St Louis meeting which led to formation of IEC. Mr Sogge is President of U.S. National Committee, IEC.

Committees for approval under the Six Months' Rule, including "Tesla" for the quantity "magnetic flux density" in the Giorgi system; "Giorgi system" for the system of units based on the meter, kilogram, second, and ampere ("MKSA system" can also be used); and the positive sign for reactive power in the sense of entering an inductive receiver.

the general participation on the part of the representatives and their desire to develop a common standard. The delegation was very happy about the results. It is planned that the new edition of the international letter symbols will be greatly expanded in regard to material of interest in the electronic and telecommunications fields and for such

mote selfish views. Rather, they explained their ideas with care, and listened sympathetically to others. When all conflicting opinions were understood, one of them would stand out clearly as the best, and be adopted for the common good.

A number of drafts were approved for circulation under the Six Months' Rule. These included rec-



The Council of the International Electrotechnical Commission. 1. Y. Niwa, Japan; 2. A. Roth, Switzerland; 3. K. Carstensen, Denmark; 4. P. Ailleret, France; 5. Gen. E. E. Wiener, Belgium; 6. Dr H. S. Osborne, USA (IEC President); 7. Dr W. Th. Bahler, Netherlands; 8. Dr R. Vieweg, Germany; 9. Dr J. A. deArtigas, Spain; 10. S. A. Solberg, Norway; 21. Vice Admiral G. F. Hussey, Jr, USN (Ret), USA; 22. R. C. 11. Dr P. Dunsheath, UK (ISO Treasurer); 12. Z. Yamauti, Japan; 13. J. Smoes, Belgium; 14. J. F. Stanley, UK; 15. J. Ollner, Sweden; 16. U. Ruelle, Italy; 17. G. Acimovic, Yugoslavia; 18. H. A. R. Binney, UK; 19. J. Cassassolles, France; 20. H. Leuch, Switzerland; 21. Vice Admiral G. F. Hussey, Jr, USN (Ret); USA; 22. R. C. Sogge, USA; 23. D. Gacic, Yugoslavia; 24. Dr H. Tornebohm, Sweden (ISO President); 25. J. W. McNair, USA; 26. Dr I. Herlitz, Sweden; 27. P. H. Chase, USA; 28. Dr P. Jacottet, Germany; 29. Dr Lal Verman, India; 30. A. Damianovitch, Yugoslavia; 31. L. Ruppert, IEC Secretary; 32. Dr J. M. Thomson, Canada; 33. Ch. Dietsch, France; 34. E. Yrjola, Finland; 35. F. E. Foa, Israel; 36. P. Milianitch, Yugoslavia; 37. H. St Leger, ISO General Secretary.

A publication containing all the decisions of TC 24 is to be prepared.

The committee recommends that the Giorgi system be used in all IEC publications and documents, but the use of CGS units should be permitted during a transitional period. — *Carl C. Chambers, chairman, USA delegation.*

Technical Committee No. 25. Letter Symbols and Signs.

Chairman, **Professor M. Landolt.**
Secretariat, USA.

Despite the considerable handicap of differing practices in the various countries and occasional lack of the exact equivalent in the French and English languages, considerable progress was made toward standardization of letter symbols in the field of electricity. This was due to details as notation for vectors and phasors, and for instantaneous, root-mean-square and peak values. — *H. M. Turner, chairman, USA delegation.*

Technical Committee No. 28. Coordination of Insulation.

Chairman, **R. Langlois-Berthelot.**
Secretariat, France.

It was decided not to make any major alterations in Publication 71 at present. An advisory subcommittee was set up to help the Secretary in drafting an application guide.

Technical Committee No. 29. Electroacoustics.

Chairman, **Professor W. Furrer.**
Secretariat, Netherlands.

The delegates came to Philadelphia determined to agree, and they set about their task directly. They wasted no time in argument to pro-

ommendations on audio apparatus, magnetic tape sound recording, lateral disk recording, and polarized plugs for hearing aids. Discussion of the method for measurement of electroacoustical characteristics for hearing aids was started at this meeting and will be continued at the next meeting. — *Laurence Batchelder, chairman, USA delegation.*

Technical Committee No. 30. Extra-High Voltages.

Chairman, **P. Ailleret.**
Secretariat, Switzerland.

Questions concerning the precise conditions of voltages on systems working at or projected for 380 kv were discussed. It was decided that the maximum voltage will be fixed at the level of 420 kv instead of 400 kv as at present. No action was taken on the nominal voltage.

Technical Committee No. 31. Flameproof Enclosures.

Chairman, **Professor L. L. Brisson**
Secretariat, United Kingdom.

Many incorrect impressions and many misunderstandings were corrected during the week-long meeting. USA representatives were outspoken regarding the high value of the meeting and the great progress made towards a common standard for flameproof enclosures.

A new draft of the specification for the construction of enclosures of flameproof electrical apparatus is to be prepared and circulated to the National Committees for approval under the Two Months' procedure. *—C. W. Falls, chairman, USA delegation.*

Technical Committee No. 33. Capacitors for Power Systems.

Chairman, **R. Nordell.**
Secretariat, Netherlands.

The specification for capacitors for power systems, second part, was approved for publication as an IEC Recommendation. Work is to be started on coupling capacitors and potential dividers as well as on tropical capacitors. This latter will be based on information on the operation of capacitors in tropical countries to be supplied by the Indian delegation.

The final IEC specifications promise to be of real value to all countries and to both manufacturers and purchasers.—*M. E. Scoville, chairman, USA delegation.*

Technical Committee No. 34. Lamps and Related Equipment.

Chairman, **M. Leblanc.**
Secretariat, United Kingdom.

In the six years of American participation in the IEC committees 34 and 34A, B, and C, tremendous progress has been made. International standardization of specifications which has been effected to date is far greater than any of us—in Europe or in the United States—have anticipated. In a comparatively short time not only have we accomplished a great deal engineering-wise, but we have learned to know each other better and to establish a common working level.

In addition to agreeing on changes in a specification for tubular fluorescent lamps for general light service, Subcommittee 34A agreed on a plan for increasing the accuracy of photometric and colorimetric measurements on fluorescent lamps. This involves the exchange of lamps between laboratories in several countries. Nine countries have agreed to participate. A specification for tungsten filament lamps for general service, relating to lamps having a life of 2,500 hours, was agreed upon for circulation under the six months' rule.

A number of standards on gages for interchangeability and safety of lamps and holders and on ceramic lamp caps were also approved for circulation under the six months' rule.

The title "luminaires" was chosen for a new subcommittee, the term "luminaire" avoiding confusion in choosing between the terms "lighting fittings" and "lighting fixtures" used by the United Kingdom and USA.—*Walter J. Hamer, co-chairman, USA delegation.*

The Philadelphia meetings gave most of the American delegates their first direct personal contact with other members of IEC, and an opportunity to observe at first hand the problems of international standardization in the electrical industry. The European delegates likewise had an opportunity to observe and evaluate the more informal conduct of American committee meetings. The overriding comment seemed to be that in technical affairs national boundaries influenced only the approach to a problem—the fundamental facts and technically accurate conclusions are quite independent of geography.—*H. H. Watson, co-chairman, USA delegation.*

Technical Committee 33, Capacitors for Power Systems. At table, left to right, Robert Nordell (Sweden), Chairman; Ir. R. F. Goosens (Netherlands), Secretary; H. W. Ghysen (Netherlands), Assistant Secretary. 1st row: Ing. Alexis Dejou (France); Philip R. Coursey (UK); Ing. Charles Jean-Richard (Switzerland); Hermann Elsner (Switzerland); 2nd row: Ing. Giuliano Segre (Italy); Ir. C. F. Van Den Berg (Netherlands); Ing. P. Skogby (Sweden); Ing. Lennart Hogfeldt (Sweden); Dipl. Ing. Ludwig Linder (Germany); 3rd row: John H. Cozens (UK); V. Venugopallan (India); Dr Ing. Alfred Cohn (Germany); Ing. D. Gacic (Yugoslavia); (delegate not registered). 4th row: M. E. Scoville (USA).

Technical Committee No. 35. Primary Cells and Batteries.

Chairman, **R. W. W. Sanderson.**
Secretariat, France.

Excellent progress was made in establishing an international standard for dry cells. This will be most important in facilitating the interchangeability of dry cells made in the various countries and used in electrical instruments manufactured in all parts of the world.

It was also decided that work should be started on a specification for mercury cells.—*Walter J. Hamer, co-chairman, USA delegation.*

Although we have had an American Standard Specification on Dry Batteries for many years, this meeting represents our first active participation in drafting an international standard. It was gratifying to find that our American Standard is rather well known in many other countries and that some of its important features have already been incorporated in the tentative IEC draft. Obviously there are many points pertaining to foreign practices and battery types that must be provided for in order to have an over-all document that will prove satisfactory on an international basis. We were favorably impressed with the obvious desire to reach a mutually acceptable specification.—*F. J. Wolfe, co-chairman, USA delegation.*

Technical Committee No. 36. High Voltage Tests. Insulators.

Chairman, **H. Puppikofer.**
Secretariat, Italy.

ASA sectional committee C68 was asked to serve in an advisory capacity at the meetings of TC 36. These meetings were fruitful technically and created appreciable good will among the international participants. A more active part in future meetings should be taken by American delegates, since absentee participation in this work is a poor substitute at best.

As a result of these meetings a specification for porcelain insulators for overhead lines will be issued as an IEC Recommendation. A new subcommittee is being organized to standardize ball and socket fittings for suspension insulators, with the Swedish Committee as secretariat. —*J. T. Lusignan and R. M. Havourd, co-chairmen, USA delegation.*

Technical Committee No. 37. Lightning Arresters.

Chairman, **J. S. Cliff.**
Secretariat, USA.

A great deal was accomplished largely because of the free and friendly interchange of ideas and the excellent work of the chairman and secretaries. Preparation of an international standard for lightning arresters of the nonlinear resistance type progressed to the fourth draft. It is expected that a revised draft will be considered at a meeting of the committee in London, June 28-July 1, 1955.—*H. R. Stewart and Edward Beck, co-chairmen, USA delegation.*

Technical Committee No. 39. Electronic Tubes and Valves.

Chairman, **T. E. Goldup.**
Secretariat, Netherlands.

At Philadelphia the work on standardization of tube bases, overall tube dimensions, connector gaps, gages, etc, started at the previous two meetings was continued. Much detail material on these was finalized for submission under the two and six months' voting rules.

Our proposals on tube characteristic measurements (IRE) and tube capacitance measurements (RETMA-NEMA) were well received. The former is scheduled to become an information document for TC 39 after editing. The latter, after it is edited to include some European types, will be considered as an IEC Document.

The Philadelphia meeting left us with a great deal of work, since there are a number of continuing projects in addition to the new ones. We were fortunate in having several JETEC and IRE representatives to assist at Philadelphia. It is apparent that international standardization work on tubes is by no means a one-way street, since understanding and exchange of ideas are as helpful to us as to others.

Delegates from 12 countries attended the meeting of TC 34. Officers at head table are (left to right) J. F. Stanley, Assistant Technical Director, British Standards Institution, UK; Secretary Prof. Maurice Leblanc, Vice-President, Commission International Eclairage, France; Chairman and Walter J. Jones, Director, Electric Lamp Manufacturers Association, UK.

NEWS FROM SOCIETIES

. . . The American Association of Textile Chemists and Colorists has elected Raymond W. Jacoby, technical consultant, Ciba Company, Inc, New York, as its 13th president. Mr Jacoby succeeds J. Robert Bonnar, General Dyestuff Company, New York. AATCC is an Associate Member of the American Standards Association, and sponsors committee L23, the U.S. Committee for the international committee on textiles, ISO/TC 38. AATCC also jointly sponsors Sectional Committee L14 on Textile Test Methods with the American Society for Testing Materials as the other sponsor.

. . . The Society of Automotive Engineers celebrated its Fiftieth Anniversary at its annual meeting, Detroit, January 10-14, 1955. C. G. A. Rosen, Consulting Engineer to the President, Caterpillar Tractor Company, is the newly elected president for 1955.

. . . The American Society of Civil Engineers announces election of William Roy Glidden, Assistant Chief Engineer, Virginia Department of Highways, Richmond, Va, as its president for 1955.

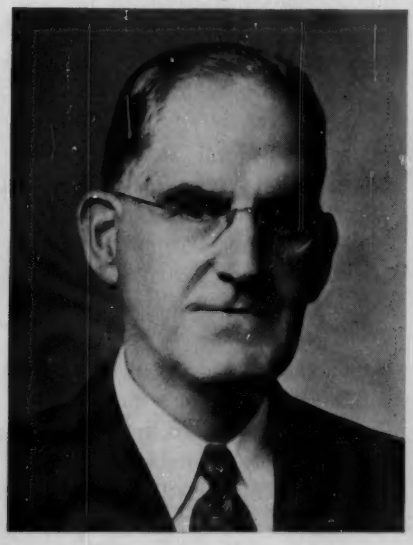
. . . The American Welding Society has announced formation of a technical Council to plan, review, and coordinate all the varied technical activities of the Society. Chairman is I. Morrison of Morrison Steel Products, Inc. Among work done by the Society's more than 100 technical committees and subcommittees have been development of new filler metal specifications, a building code for structural welding, and preparation of a comprehensive brazing manual. Work is under way on a similar manual for soldering.

. . . The American Society of Mechanical Engineers recently announced organization of a Nuclear Engineering Committee. The committee will coordinate the society's activities in "those areas of mechanical engineering in which a knowledge of nuclear physics is essential." Chairman of the new committee is Albert C. Pasini, assistant general superintendent of production, The Detroit Edison Company. The function of the Nuclear Engineering Committee is distinct from that of ASME's Nuclear Energy Application Committee. The latter is a policy group. On the other hand, the Nuclear Engineering Committee could lead to the formation of an organization of professional division status, similar to the 21 professional divisions through which much of the work of the society is now processed.

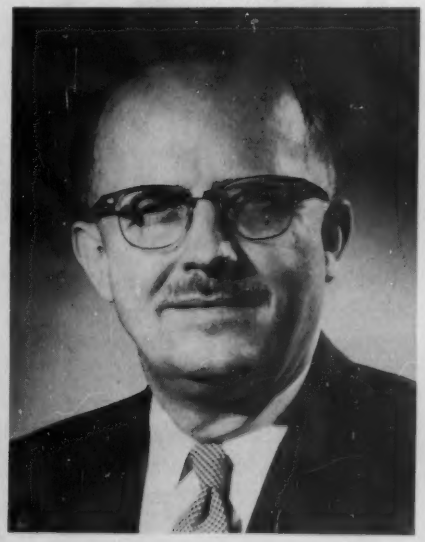
. . . At its Fiftieth Annual Meeting, in Philadelphia, November 28 - December 1, 1954, the American Society of Refrigerating Engineers installed its national officers and directors for 1955. Leon Buehler, Jr, Chief Refrigeration Engineer, Creamery Package Manufacturing Company, Chicago, is president.

At this same meeting, R. C. Cross was appointed Executive Secretary of the Society, succeeding M. C. Turpin who retired as of the end of the year. Mr Cross came to the Society from Sears, Roebuck and Company where he was assistant manager of the merchandise testing and development laboratories.

William Roy Glidden



Leon Buehler, Jr



Raymond W. Jacoby

. . . The New York Chapter of The Society for the Advancement of Management re-elected Miss Madge Davidson as its treasurer for 1954-55. Miss Davidson is office manager of the American Standards Association. She has been active in SAM's New York Chapter for more than 10 years.

. . . Twenty-fifth president of the National Electrical Manufacturers Association is Albert F. Metz, elected at the Association's annual meeting in November, 1954. Mr Metz is chairman of the board of directors and chief executive officer of The Okonite Company, Passaic, N.J.

. . . The American Society of Mechanical Engineers starts celebration of its Seventy-fifth Anniversary in February, 1955. Symbol of the occasion is a nuclear energy cycle superimposed on a Carnot thermodynamic cycle, and an indication of their effect on the world in which we live.

. . . A new Technical Unit Committee to define certain minimum standards on formulation and application of prefabricated plastic film for application to pipe lines is being organized by the National Association of Corrosion Engineers. R. B. Bender, Plastic Engineering & Sales Corporation, Forth Worth, is chairman.

. . . The American Society of Heating and Air-Conditioning Engineers, Inc, is now the name of The American Society of Heating and Ventilating Engineers. The Society has been an Associate Member of ASA since 1937.

. . . The American Society for Testing materials has announced actions of its Administrative Committee on Standards in approving new and revised tentatives and withdrawing a number that are out of date. Included in the actions taken late last year is approval of Tentative Specifications for Metal-Arc Welded Steel Pipe for High Pressure Transmission Service (A 381). These specifications were developed in response to a request from ASA Sectional Committee B31, which hopes to refer to them in the next revision of the American Standard Code for Pressure Piping.

Also acted on was a revision to the Tentative Specification for Gasoline (D 439). This revision raises the minimum octane number requirements for regular and premium gasolines. These requirements are reviewed regularly by Technical Committee A of Committee D-2 on Petroleum Products and Lubricants and compared with the octane number levels of those gasolines reported in the National Motor Gasoline Survey. The 1953-54 winter survey revealed a change in octane number level from 78 to 79 for regular gasoline and from 86 to 87 for premium gasoline. The revision in Specification D 439 reflects these changes.

A list of all actions taken by the Administrative Committee on Standards can be obtained from the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa.

A series of American Standards on wire and cable has been published by the American Society for Testing Materials in the 8½ x 11 in. size, thus making them available in the same size as other American Standards on wire and cable. This is in line with the request of the Company Member Conference which found that ASA Members prefer the standard letter size for filing purposes.

. . . The various sections of the Standards Engineers Society have been active this winter. Value analysis was the subject under consideration by both the Southern Tier Section (Binghamton, N.Y.) at its December meeting, and the Metropolitan Philadelphia Section at its November meeting. W. L. Healy, General Electric Company, presented the subject before the Southern Tier Section, and Earl H. Kittle, Technical Consultant, Value Analysis Unit, General Electric, Schenectady, before the Philadelphia Section. Mac C. Batsel, Chief Engineer, Engineering Products Division, Radio Corporation of America, Camden, and R. F. Drenick, Advance Development Engineering, Radio Corporation of America, Camden, spoke on Reliability — A New Standards Concept, at the Winter Meeting of the Greater Philadelphia Section, January 24.

The recently organized Southern New England Section with headquarters in Hartford, Connecticut, heard a discussion on Preferred Numbers by Dr John Gaillard at its December meeting. R. G. Munroe, Manager, Engineering Standards Section, Raytheon Manufacturing Company, Newton, Mass., spoke on the Human Factor in Standardization at the section's January meeting. This section was organized in September with some 40 charter members.

The New York Section heard W. H. Kiler, E. I. duPont de Nemours & Company, Wilmington, speak on the Standards Program of the DuPont Company at its November meeting. At its first 1955 meeting, the New York Section heard H. R. Terhune, Manager, Standards Department, Federal Telecommunication Laboratory, discuss the question, What Good are Committees.

Plans for the 1955 Annual Meeting of the Society are already underway. Place, Hotel Statler, Hartford, Connecticut. Time—September 29, 30, and October 1. So much interest was shown in papers presented at the 1954 Annual Meeting that it has been decided to publish the Proceedings. Copies will be available at $3.00.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering please refer to the number following the title.

05. PERIODICALS

Denmark (DS)

Rules for layout of periodicals — DS 148

001.4 SCIENTIFIC NOMENCLATURE

United Kingdom (BSI)

Recommended names for chemicals used in industry — BS 2474:1954

025.45 UNIVERSAL DECIMAL CLASSIFICATION (UDC)

United Kingdom (BSI)

Macromolecular materials (rubbers and plastics) — BS 1000 678:1954

Industries based on stone and other processable materials — BS 1000 679:1954

389.171 PREFERRED NUMBERS

Netherlands (HCNN)

Manual for preferred series — N 3070

389 METROLOGY. STANDARDIZATION

Uruguay (UNIT)

Preferred numbers — UNIT 101-54

534.7 PHYSIOLOGICAL ACOUSTICS

United Kingdom (BSI)

The normal threshold of hearing for pure tones by earphone listening — BS 2497:1954

536.5 TEMPERATURE MEASUREMENT

Netherlands (HCNN)

2 types of immersion thermometers for industrial use — N 1294/5

54 CHEMISTRY

United Kingdom (BSI)

Laboratory thermometers — BS 593:1954

Incubator, water bath, and oven thermometers for laboratory use — BS 619:1954

Heating and cooling blocks for microchemical purposes — BS 1428: Part G1:1954

Lunge nitrometers — BS 2070:1954

Methods of sampling and testing boiler water deposits — BS 2455:1954

614.37 INSPECTION AND CONTROL OF VARIOUS COMMODITIES

United Kingdom (BSI)

Cleanliness of fillings and stuffings for bedding, upholstery, toys, and other domestic articles — BS 1425:1954

614.8 PREVENTION OF ACCIDENTS

South Africa (SABS)

Code of practice for the prevention of explosive and electrical hazards in hospitals — SABS 051-1953

614.89 SAFETY CLOTHING

United Kingdom (BSI)

Helmets for racing motor car drivers — BS 2495:1954

615.4 PRACTICAL PHARMACY

United Kingdom (BSI)

Overbed tables for use in hospitals — 2483:1954

Acrylic resin denture base materials — 2487:1954

621.187 BOILER ATTENDANCE. BOILER SUPERVISION

United Kingdom (BSI)

Treatment of water for land boilers — BS 2486:1954

621.3 ELECTRICAL ENGINEERING

Canada (CSA)

Construction and test of transformers for luminous-tube signs, oil- or gas-burner ignition equipment, cold-cathode interior lighting — C22.2 13-1954

Construction and test of lampholders and control equipment for use with electric discharge lamps — C22.2 74-1954

Construction and test of power-operated radio transmitters — C22.2 98-1954

Specification for antenna towers and antenna supporting structures — C22.4 111-1954

Specification for amateur and domestic antenna supporting structures — C22.4 112-1954

(The above material is all part of the Canadian Electrical Code, Parts 2 and 4)

Germany (DSA)

Graphical symbols for power switchgears — DIN 40713 B1.1

Graphical symbols for telecommunication signal installations — DIN 40708

Dry rectifiers — DIN 41760

Junction boxes for power cables up to 10 kv — DIN 47600 B1.2

Cable clip — DIN 47642

Headlamp holder type BA 20 — DIN 49736

Insulators type RMd — DIN 48141

Italy (UNI)

4 standards for poles for telephone, telegraph, and signal lines in railroad installations — UNI 3512/5

Reinforced concrete poles for telephone, telegraph, and signal lines in railroad installations — UNI 3511

Steel tubular poles for telephone, telegraph, etc — UNI 3516

Motor tramway coaches mounted on 3 or 4 axes — UNI 3542

Statistical data relative to interurban tramways — UNI 3540

Mexico (DGN)

Miniature electric lamps — DGN J 25

Netherlands (HCNN)

List of different types of insulated conductors for power service — V 1277

Domestic electrical refrigerators, nomenclature — V 2165

Lighting fittings for airfield runway — V 3029

Rumania (CSS)

Branching ferrules for overhead lines — STAS 3539

3-phase asynchronous motors for portal cranes scale of standard ratings 1 to 100 kw — STAS 3564

High tension overhead line suspension insulators — STAS 3565

Universal clamp for overhead line suspension — STAS 3630

Plugs and receptacles for domestic appliances — STAS 2801

End insulators for overhead lines up to 1 kv — STAS 3187

Electric machinery shaft ends — STAS 3432

Graphical symbols for relays — STAS 3527

Name plates for rotating machines — STAS 3528

Name plates for 3-phase oil transformers — STAS 3529

Marking of terminals of different transformers — STAS 3530/2

Copper conductors for antennae — STAS 3534

Measurement instruments: scale of currents and voltage — STAS 3537

South Africa (SABS)

Code of practice for the testing of electricity meters — SABS 01-1953

Standard specification for apparatus connectors for portable domestic appliances — SABS 167-1953

Standard specification for porcelain cleats, bobbins, and leading-in tubes — SABS 176-1953

Electrical equipment safety specifications for general requirements for portable domestic and industrial electrical appliances — SABS SV 100-1953

Electrical equipment safety specifications for domestic electric washing machines — SABS SV 108-1953

Electrical equipment safety specifications for portable electric reading lamps — SABS SV 123-1953

Sweden (SIS)

Instrument transformers — SEN 9

Lightning conductor material. Summary — SEN 07 01

16 standards for component parts of lightning conductor installation — SEN 07 02/07 17

Specifications for transformer oil — SEN 14 02

United Kingdom (BSI)

Enamel (oleoresinous) and silk or rayon covered round copper wire — BS 2479:1954

Silk or rayon covered round copper wire — BS 2480:1954

Preferred values and associated tolerances for resistors and capacitors for telecommunication equipment — BS 2488:1954

Automatic change-over contactors for emergency lighting systems — BS 764:1954

Recommendations for ascertaining and expressing the performance of loudspeakers by objective measurements — BS 2498:1954

The performance of octave band-pass filters — BS 2475:1954

Carbon brushes (parallel-sided) for use on commutator and slip-ring machines — BS 96:1954

Impregnated paper-insulated cables for electricity supply Part 1: Lead or lead-alloy sheathed cables for working voltages up to and including 33 kv — BS 480:Part 1:1954

Part 2: Aluminum sheathed cables for working voltages up to and including 22 kv — BS 480:Part 2:1954

621.52 AUTOMATIC CONTROLS

United Kingdom (BSI)

Glossary of terms used in automatic controlling and regulating systems: Section 3: Kinetic control — BS 1523:Section 3:1954

621.56 REFRIGERATION

United Kingdom (BSI)

Manufacture and testing of refrigerating cabinets (reach-in type) — BS 2501:1954
Manufacture and testing of sectional cold rooms (walk-in type) — BS 2501:1954

621.64 DEVICES FOR CONVEYANCE AND STORAGE OF GASES AND LIQUIDS IN GENERAL

Denmark (DS)

Seamless, stainless pipe — DS 720
Pipe couplings — DS 721.0/3

Netherlands (HCNN)

13 temporary standards for thin-walled waste pipes and fittings — V 2100/12
Ball valve for flushing cistern — V 2128
Street boxes for gas and water line — V 2168

621.643 PIPES AND ACCESSORY PARTS

Mexico (DGN)

Copper water pipes — DGN B 61
Copper gas pipes — DGN B 62

Rumania (CSS)

Cast iron pressure pipes and fittings — STAS 1650

621.646.2 VALVES

United Kingdom (BSI)

Flanged steel outside-screw-and-yoke wedge gate valves for the petroleum industry — BS 1414:1954

621.7 WORKSHOP PRACTICE

United Kingdom (BSI)

Engineers' comparators for external measurement — BS 1054:1954
Preferred sizes for casting pit refractories — BS 2496:1954

621.71.744 TECHNICAL DRAWING

Canada (CSA)

Mechanical engineering drawing standards — CSA B78.1-1954

621.753 TOLERANCES. FITTINGS. GAGES

Rumania (CSS)

3 standards for different plug gages — STAS 3433;-3633/4

United Kingdom (BSI)

Primary selection of fits (data sheet No. 1) — BS 1916C:Aug. 1954
Secondary selection of fits (data sheet No. 2) — BS 1916D:Aug. 1954

621.798 PACKING AND DESPATCH EQUIPMENT

United Kingdom (BSI)

Tins for lubricating greases — BS 2469:1954

621.83 GEARS, RACKS, ETC

Italy (UNI)

Series of modules and respective pitches — UNI 3521
Reference profile of gear — UNI 3522

621.85 FLEXIBLE TRANSMISSIONS

Mexico (DGN)

Leather belting — DGN I 9

621.86 MEANS OF LIFTING AND TRANSPORTING

Netherlands (HCNN)

Rumania (CSS)

Cast iron pressure pipes and fittings — STAS 1650

621.88 MEANS OF ATTACHMENT. FASTENINGS

Rumania (CSS)

Machine screws with countersunk oval head, Whitworth thread — STAS 3166
Metric thread from 6 to 68 mm; tolerances — STAS 3296
1:50 taper pins — STAS 3436

Sweden (SIS)

Screws and screwed joints. General survey — SMS 1470
Wood screws, hexagon head, type S6ST — SMS 1576
Nuts. General survey — SMS 1631
Washers, studs, pins. General survey — SMS 1632

United Kingdom (BSI)

Hexagon socket screws and wrench keys — BS 2470:1954

621.89 LUBRICATION

India (ISI)

Specification for grease, L/A No. 1 — IS 506-1953
Specification for grease, L No. 3 — IS 507:1953
Specification for grease, L No. 3, Graphited — IS 508-1953
Specification for grease, L No. 4 — IS 509-1953

Sweden (SIS)

Spherical lubricating nipples — SMS 1567

621.9 MACHINE TOOLS. TOOLS

Netherlands (HCNN)

2 standards for high-speed butt-welded lathe cutting tools — V 1794;-1798

Rumania (CSS)

Spline forming milling cutters — STAS 3091/2
Taps for metric and Whitworth threads. Tolerances — STAS 3334/5
Milling cutters for gears — STAS 3337/8
Milling cutters for metric and Whitworth thread — STAS 3379/80
Rules for reception of vertical and horizontal milling lathes — STAS 3381/2
2 types of bench vises — STAS 3434/5
Taper milling cutters — STAS 3456
7 standards for different milling cutters — STAS 3540/6

Sweden (SIS)

Milling cutter. Nomenclature — SMS 900
Endface mills, short — SMS 911

United Kingdom (BSI)

Tee slots — BS 2485:1954
Circular saws for woodworking and their attachment — BS 411:1954

USSR

3 types of milling cutters — GOST 1671;-6637;-6648-53
Carbide-tipped reamers — GOST 6646-53
Carbide-tipped drills — GOST 6647-53
Carbide-tipped countersinks — GOST 1677-53
Round dies — GOST 1679-53
3 standards for abrasive disks trueing tools — GOST 4802/3;-6565-53
Straight-edge knives for wood working machines — GOST 6567-53

621.92 POLISHING, GRINDING, SIFTING, ETC, MACHINES

Rumania (CSS)

2 standards for abrasive disks — STAS 603/4

United Kingdom (BSI)

Dimensions of grinding wheels and segments of grinding wheels — BS 620:1954

USSR

Square-mesh wire sieve net of standard quality — GOST 6613-53
Square-mesh wire sieve net of high precision — GOST 3584-53

622.32 EXPLOITATION OF LIQUID AND GASEOUS MINERALS

Rumania (CSS)

Drilling tool joints — STAS 3037
2 tools used in oil drilling — STAS 3385/6
Gas separation for extraction pumps — STAS 3460
4 standards for extracting drill pipes, etc — STAS 3587

624 CIVIL ENGINEERING

Rumania (CSS)

3 standards for prefabricated wooden constructions — STAS 2790;-2794/5
5 standards for wooden windows for stables, etc — STAS 3491/5

624.15 FOUNDATIONS

Rumania (CSS)

Granulometric analysis of soil — STAS 3282
Open shaft sounding of soil — STAS 3413
Admissible pressure on the ground — STAS 3503

624.2/.8 BRIDGE CONSTRUCTION

Rumania (CSS)

Rules for construction and acceptance of bridges in factories — STAS 3461

625.1/6 RAILWAYS AND TRAMWAYS

Rumania (CSS)

Wooden sleepers — STAS 331

Sweden (SIS)

Rail hammer — SMS 1604

625.84 CONCRETE ROADS

United Kingdom (BSI)

Tests to assess the properties of hot applied joint sealing compounds for concrete pavements — BS 2499:1954

628.9 ILLUMINATION

Canada (CSA)

Canadian standard practice for industrial lighting — CSA C92.1-1954

629.11 LAND VEHICLES. TRANSPORT ENGINEERING

Germany (DNA)

8 standards for different types and sizes of automobile tire valves — DIN 7759;-7765/7;-7775/8

Sweden (SIS)

Tread tolerances for bicycles — SMS 1380

645 FURNITURE, FURNISHING, UPHOLSTERY

Netherlands (HCNN)

2 standards for primary school furniture — N 1796/7

USSR

Hardware used in cabinet and furniture work — GOST 6673-53

What Are Your Comments on the Electrical Instruments Standards?

Here is your chance to express your views! Committee C39 wants to know what you think of the American Standards on indicating instruments and on recording instruments. The committee wants the opinion of instrument users and manufacturers to help it improve these standards. It is now revising the American Standard C39.1-1950, Electrical Indicating Instruments, and plans to bring the American Standard C39.2-1953, Direct-Acting Recording Instruments, up to date as soon as such action seems necessary.

If you are a user or manufacturer of electrical instruments, please fill in the questionnaire below and return it to Mr Herman Koenig, Chairman, Sectional Committee C39, Care of Electrical Testing Laboratories, 2 East End Avenue, New York.

QUESTIONNAIRE	*Amer Std Electrical Recording Instruments C39.2-1953*	*Amer Std Electrical Indicating Instruments C39.1-1950*
1. Are you familiar with these standards?		
2. When buying indicating or recording instruments, does your company specify that they must meet the requirements of these standards?		
3. Do you use the standards in your acceptance tests?		
(a) In whole?		
(b) In part?		
4. Have they proved satisfactory for this purpose?		
5. Did you find the "Detailed Data" sheets useful?		
6. Do they cover all the characteristics in which you are interested?		
7. Can you suggest wherein they might be improved?		
8. Are the Test Requirements (Methods) given in sufficient detail?		
9. In order to obtain rated accuracy under "Sustained Operation Influence," manufacturers, in general, would have to build special single-range instruments. Would you consider such instruments essential for your work?		
10. Other comments.		

AMERICAN STANDARDS

Status as of January 24, 1955

Building

American Standards Approved—

National Plumbing Code, A40.8-1955
Sponsors: American Public Health Association; American Society of Mechanical Engineers

Gypsum Plastering, Specifications for, A42.1-1954 (Revision of A42.1-1950)

Interior Lathing and Furring, Specifications for, A42.4-1954 (Revision of A42.4-1950)
Sponsors: American Institute of Architects; American Society for Testing Materials

Gypsum Wallboard, Specifications for, ASTM C36-54; ASA A69.1-1955 (Revision of ASTM C36-52; ASA A69.1-1952)
Sponsor: American Society for Testing Materials

In Standards Board—

Building Code Requirements for Minimum Design Loads in Buildings and Other Structures, A58.1 (Revision of A58.1-1945)
Sponsor: National Bureau of Standards

Non-Spark Conductive Oxychloride Composition Flooring and Its Installation, Specifications for, A88.9
Sponsors: American Society for Testing Materials; National Bureau of Standards

Standard Submitted—

Standard Types of Building Construction, NFPA 220; ASA A110
Sponsor: National Fire Protection Association

Standard Withdrawn—

Plumbing Code, A40.7-1949
Sponsors: American Public Health Association; American Society of Mechanical Engineers
NOTE: With approval of the National Plumbing Code, A40.8-1955, this standard has been withdrawn.

Consumer Goods

In Board of Review—

Rating and Testing Home Freezers, Method of, B38.3
Sponsors: American Society of Refrigerating Engineers; U.S. Department of Agriculture

In Standards Board—

Sampling and Chemical Analysis of Alkaline Detergents, Method of, ASTM D501; ASA K60.21 (Revision of ASTM D501-49; ASA K60.21-1950)
Sponsor: American Society for Testing Materials

Standard Submitted—

Computing Food-Storage Volume and Shelf Area of Automatic Household Refrigerators, Method of, B38.1 (Revision of B38.1-1944)
Sponsors: American Society of Refrigerating Engineers; U.S. Department of Agriculture, Bureau of Home Nutrition and Home Economics

Electrical

American Standard Published—

Recommended Practice for Volume Measurements of Electrical Speech and Program Waves, C16.5-1954 (Revision of C16.5-1942) $0.50
Sponsor: Institute of Radio Engineers
Applies to the method of and a device for measuring the strength of audio-frequency electrical waves such as speech and program waves. The VU reference level is defined and the specifications of a volume indicator are given.

American Standard Approved—

Switchgear Assemblies and Metal-Enclosed Bus, AIEE No. 27; ASA C37.20-1955
Sponsor: Electrical Standards Board

In Board of Review—

Measurement of Interference Output of Television Receivers in the Range of 300 to 10,00 kc, (54 IRE 17.S1); ASA C16.25
Sponsor: Institute of Radio Engineers

Schedules of Preferred Ratings for Power Circuit Breakers, C37.6 (Revision of C37.6-1953)
Sponsor: Electrical Standards Board

In Standards Board—

Terms for Audio Techniques, Definitions of, 54 IRE 3.S1; ASA C16.24
Sponsor: Institute of Radio Engineers

Natural Muscovite Mica Based on Visual Quality, Specifications for, ASTM D351-53T; ASA C59.27
Sponsor: American Society for Testing Materials

Terms of Electron Tubes, Definitions of, C60.9

Terms of Magnetrons, Definitions of, C60.10

Terms of Gas Filled Radiation Counter Tubes, Definitions of, C60.12
Sponsor: Joint Electron Tube Engineering Council

Standard Submitted—

Terms in the Field of Linear Varying Parameter and Nonlinear Circuits, Definitions of,
Submitted by: Institute of Radio Engineers

Project Initiated—

Terminology for Automatic Controls, C85
Sponsor: American Society of Mechanical Engineers

Gas Burning Appliances

American Standards Published—

Addenda (Z21.5a) to American Standard Approval Requirements for Domestic Gas Clothes Dryers, Z21.5-1953 $0.25

Addenda (Z21.13.1a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume I, Steam and Hot Water Boilers, Z21.13.1-1951 $0.25

Addenda (Z21.13.2b) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume II, Gravity and Forced Air Central Furnaces, Z21.13.2-1951 $0.50

Addenda (Z21.13.3a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume III, Gravity and Fan Type Floor Furnaces, Z21.13.3-1951 $0.25

Addenda (Z21.13.4a) to American Standard Approval Requirements for Central Heating Gas Appliances, Volume IV, Gravity and Fan Type Vented Recessed Heaters, Z21.13.4-1951 $0.25

Addenda (Z21.34a) to American Standard Approval Requirements for Gas-Fired Duct Furnaces, Z21.34-1942, R1950 $0.25
Sponsor: American Gas Association

Materials and Testing

American Standards Approved—

Primer for Use With Asphalt in Dampproofing and Waterproofing, Specifications for, ASTM D41.41; ASA A109.1-1955

Asphalt-Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roof, Specifications for, ASTM D226-47; ASA A109.2-1955

Coal-Tar Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D227-47; ASA A109.3-1955

Asphalt-Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs, Specifications for, ASTM D250.47; ASA A109.4-1955

Asphalt-Saturated and Coated Asbestos Felts for Use in Constructing Built-Up Roofs, Specifications for, ASTM D655-47; ASA A109.5-1955

Coal-Tar Pitch for Roofing, Dampproofing and Waterproofing, Specifications for, ASTM D450-41; ASA A109.6-1955

Coal-Tar Pitch for Steep Built-Up Roofs, Specifications for, ASTM D654-49; ASA A109.7-1955

Test for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing and Shingles, Method of, ASTM D451-40; ASA A109.8-1955

Test for Sieve Analysis of Nongranular Mineral Surfacing for Asphalt Roofing and Shingles, Method of, ASTM D452-40; ASA A109.9-1955

Sampling and Testing Felted and Woven Fabrics Saturated with Bituminous Substances for Use in Waterproofing and Roofing, Methods of, ASTM D146-47; ASA A109.10-1955

Test for Steam Distillation of Bituminous Protective Coatings, Method of, ASTM D255-28; ASA A109.11-1955

Woven Cotton Fabrics Saturated With Bituminous Substances for Use in Waterproofing, Specifications for, ASTM D173-44; ASA A109.12-1955

Sponsor: American Society for Testing Materials

Mechanical

American Standards Published—

Letter Symbols for Gear Engineering, B6.5-1954 (Revision of B6.5-1949) $1.00

Gear Nomenclature (Terms, Definitions, and Illustrations), B6.10-1954 (Revision of B6.10-1950); AGMA 112.03 $1.50

Sponsors: American Gear Manufacturers Association; American Society of Mechanical Engineers

American Standard Approved—

Surface Roughness, Waviness, and Lay, B46.1-1955 (Revision of B46.1-1947)

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

In Board of Review—

Square and Hexagon Bolts and Nuts, B18.2 (Revision of B18.2-1952)

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Withdrawal of Project Being Considered—

Rotary Cone Valves, B61

Requested by: American Society of Mechanical Engineers

Mining

In Standards Board—

Quarry Safety Code, M28.1

Sponsor: National Safety Council

Petroleum Products and Lubricants

In Board of Review—

Test for Distillation of Gasoline, Naphtha, Kerosene, and Similar Petroleum Products, Method of, ASTM D86-54; ASA Z11.10 (Revision of ASTM D86-53; ASA Z11.10-1953)

Test for Distillation of Natural Gasoline, Method of, ASTM D216-54; ASA Z11.11 (Revision of ASTM D216-53; ASA Z11.11-1953)

Test for Distillation of Gas Oil and Similar Distillate Fuel Oils, Method of, ASTM D158-54; ASA Z11.26 (Revision of ASTM D158-53; ASA Z11.26-1953)

Test for API Gravity of Petroleum and Its Products, Method of (Hydrometer Method), ASTM D287-54; ASA Z11.31 (Revision of ASTM D287-52; ASA Z11.31-1952)

Test for Distillation of Crude Petroleum, Method of, ASTM D285-54T; ASA Z11.32 (Revision of ASTM D285-52; ASA Z11.32-1952)

Test for Neutralization Value (Acid and Base Numbers) by Potentiometric Titration, Method of, ASTM D664-54; ASA Z11.59 (Revision of ASTM D664-52; ASA Z11.59-1952)

Test for Saponification Number of Petroleum Products by Potentiometric Titration, Method of, ASTM D939-54; ASA Z11.67 (Revision of ASTM D939-52; ASA Z11.67-1952)

Test for Specific Gravity of Petroleum and Its Products (Hydrometer Method), Method of, ASTM D1298-54; ASA Z11.84

Sponsor: American Society for Testing Materials

Photography

In Board of Review—

Photographic Exposure Computer, PH2.7 (Revision of Z38.2.2-1949)

Sponsor: Photographic Standards Board

16mm Sound-Focusing Test Film, PH22.42 (Revision of Z22.42-1946)

16mm 400-Cycle Signal-Level Test Film, PH22.45 (Revision of Z22.45-1946)

16mm Buzz-Track Test Film, PH22.57 (Revision of Z22.57-1947)

16mm Motion-Picture Projector for Use With Monochrome Television Film Chains Operating on Full Storage Basis, PH22.91

35mm Magnetic Azimuth Alignment Test Film, PH22.99

Sponsor: Society of Motion Picture and Television Engineers

In Standards Board—

Dimensions for 70mm Perforated Film for Cameras Other Than Motion Picture Cameras, PH1.20

Focal Length of Lenses, Markings, PH3.13 (Revision of Z38.4.4-1942)

Sponsor: Photographic Standards Board

Reaffirmation Approved—

Printer Aperture Dimensions for Contact Printing 16mm Reversal and Color Reversal Duplicate Prints, PH22.49-1955 (Reaffirmation of Z22.49-1946)

Requested by: Society of Motion Picture and Television Engineers

Pipe and Fittings

New Project Requested—

Plastic Pipe

Requested by: Chemical Industry Advisory Board

Rubber Industry

American Standard Approved—

Sample Preparation for Physical Test-

ing of Rubber Products, Method of, ASTM D15-54T; ASA J1.1-1955 (Revision of ASTM D15-52T; ASA J1.1-1953)

Sponsor: American Society for Testing Materials

Safety

In Standards Board—

Specifications to Minimize Hazards to Children from Residual Surface Coating Materials, Z66.1
Sponsor: American Academy of Pediatrics

Projects Requested—

Auto Seat Safety Belts
Requested by: Association of Casualty and Surety Companies, Accident Prevent Department; Industrial Equipment Association

Safety Code for Lawn Mowers
Requested by: Lawn Mower Institute

WHAT IS YOUR QUESTION ?

Is there any standard that defines the slip resistance characteristics of material used in the soles of American shoes?

The subject of slip resistance, particularly the resistance between sole or heel materials as compared to the slipperiness characteristics of floor surfaces, has been studied in the ASA project on Walkway Surfaces, A22. Work on this project has been suspended for the time being. So far the committee has not been able to find a satisfactory portable machine that will test slipperiness characteristics and give reproducible results.

What can we expect in eccentric relationship between the outside diameter (OD) and inside diameter (ID) of plain washers? American Standard B27.2-1953 shows only the tolerance for OD and ID.

At the time the standard in question was developed, Subcommittee 1 of Sectional Committee B27 discussed the matter of eccentricity at some length. The chairman reports that users present were inclined to agree with producer representatives that this detail is relatively unimportant for general purpose washers and that control would increase the cost of production. Since then a new proposed standard on precision washers has been prepared in which it is proposed that "inside and outside diameters (of precision washers) shall be concentric within at least the inside diameter tolerance." This may give a clue to what to expect of general purpose washers as well. However, such a tolerance applied to general purpose washers would make them special, and they would no longer conform to B27.2-1953.

Is the American Standard Scheme for Identification of Piping Systems, A13-1928 (Reaffirmed 1947) being revised?

The A13 sectional committee is working on a revision of this standard but cannot tell when its work may be completed. Unofficial word from the committee indicates that no radical change in the significance of the colors is being considered. However, the committee is finding that there are too many fluids in pipes to be properly designated by the limited number of colors which can be easily recognized. The committee is leaning, therefore, to the conclusion that identification of the substance in the pipe should be by means of either the chemical or trade name leaving the color function to the designation of whether the fluid is safe, dangerous, or for fire protection.

What's New on American Standard Projects

Elevator Safety Code, A17—

Sponsor: American Institute of Architects; American Society of Mechanical Engineers; National Bureau of Standards; U.S. Department of Commerce

A revision of the 1937 edition of the American Standard Safety Code for Elevators, Dumbwaiters, and Escalators has been completed by the sectional committee and submitted to the sponsor organizations. If approved by the sponsors, the new edition will be submitted to the American Standards Association for approval.

All Textiles, L25—

Sponsor: National Retail Dry Goods Association

The group on Women's and Infants' Wearing Apparel and Accessories, a subcommittee of L25, took initial steps in setting up performance requirements for the end-use of all textiles at a meeting, January 20. Jay H. Rossbach, vice-president, Saks Fifth Avenue, presided as chairman of the group.

Mr Rossbach appointed a committee to recommend end-use classification for various textiles for wearing apparel and their characteristics in use as determined by certain existing tests. The committee will have collected its data at the next meeting, February 23.

The six-man committee includes Dr Jules Labarthe, Jr (chairman) representing the National Retail Dry Goods Association; Charles H. Sylvester, representing the American Association of Textile Chemists and Colorists; V. C. McCollom, Silk and Rayon Printers and Dyers Association; Dr George S. Wham, Jr, American Home Economics Association; C. A. Baker, American Association of Commercial Laboratories; and Ralph B. Smith, American Institute of Laundering.

Drainage of Coal Mines, M6 —

Sponsor: American Mining Congress

Up - to - date provisions for coal mine drainage are incorporated in a

revision of the 1931 edition of this standard now being circulated to Sectional Committee M6 for vote.

Commercial Arbitration, Z73—

Sponsor: American Arbitration Association

This existing standard, submitted to ASA by the American Arbitration Association, was voted not a suitable subject for approval as American Standard at a meeting of the Standards Council, January 25. The Council considered the question to be so important, however, that it asked the chairman to name a special committee to make a study of what constitutes a suitable standard for approval by ASA. The committee is to report its recommendations to the Standards Council which will then make recommendations to the Board of Directors for development of a policy statement.

Highway Traffic Standards Board —

Three subcommittees are studying the subjects of roads, vehicles, and road users as part of the work of compiling a bibliography of all highway traffic standards now available anywhere in the United States.

• Four new members of the Administrative Committee of the Company Member Conference took office the first of this year. They are: W. C. Cadwell, Engineering General Supervisor, Quality Control Engineering Department, Caterpillar Tractor Company, Peoria, Illinois; P. C. Haar, Warner and Swasey Company, Cleveland, Ohio; F. O. Smeltz, Supervisor, Standardization Section, Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin; J. A. Thorud, Standardization Engineer, Minneapolis - Honeywell Regulator Company, Minneapolis, Minnesota.

• The Bulgarian Standards Body became a member of the International Organization for Standardization as of January 1, 1955. This brings the number of ISO members to 35.

STANDARDS OUTLOOK

by LEO B. MOORE

STANDARDS TRAINING

Many companies supplement the education of the young engineer with in-plant training courses to round out his education and to train him in the problems and environment of his chosen company. The great success of these programs is verified by the number of new graduates who seek companies for this very opportunity.

Look for more in-plant training in the future, because schools are becoming convinced of the need to educate, not to train. Engineering education is being aimed at the whole man, on a generalist, rather than a specialist, basis. The school will give him his education; the company, his training. Whether the program for the incoming engineer is of a formal or informal nature, more companies must be prepared to carry out this responsibility.

This clear trend discloses an opportunity that should have been seized by standards engineers some time ago. Too many of the programs now being offered by companies do not include any consideration of the work of the standards department. Those that do could provide a more adequate treatment.

Standardization should have its place in the thinking and work of the engineers of an economy that is more and more engineering-oriented. From his first contribution on, the engineer will make decisions that either affect standards or should be guided by them. He will decide on materials, tooling, and equipment; he will determine processes and procedures; he will establish designs and specifications. These are all matters of great importance to the standardization efforts in the company. By sheer neglect at the beginning, do we not create a larger problem of training in the future?

The simple answer of gaining a space of time in the training program for standards is not enough. It is merely a beginning. Standards principles and practices are of a nature that require their constant demonstration and recall. It is not second nature for an engineer to think first of the applicable standards and then proceed with the remainder of his problem. He must also be made aware of the progress of the standards efforts on a regular basis. Sending him new sheets for his standards manuals is not enough. He must by some device—a summary or review—be informed of the new developments and decisions promulgated by the standards group. This is the real and continuing training problem that faces us.

Someone has said—"To learn, teach." As standards engineers shoulder this teaching need of the future, they will learn more about the true worth of their work. They will seek other opportunities to present their message to the staff and the line—all the way to the top. They will disseminate their ideas and experiences so that everyone may profit by them and learn from them.

This sharing of knowledge about standardization is the first opportunity of the future for you as a standards engineer, because it will inspire others to follow where you lead.

Mr Moore is Assistant Professor of Industrial Management at Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

DON'T LET YOUR COMPANY LOSE THROUGH ACCIDENTS!

For Woodworking Safety Consult the New Edition of American Standard Safety Code for Woodworking Machinery *O1.1-1954* *$1.00*

Prepared by ASA Sectional Committee O1, sponsored by the Association of Casualty and Surety Companies and the International Association of Governmental Labor Officials

HERE IS THE SAFE WAY TO

Special features—an entire revision of safety requirements for cooperage
—a new section on radial-type saws

Recommendations for putting the rules into effect are included in an appendix.

Other standards recommended as supplementary requirements:

Safety Code for Mechanical Power-Transmission Apparatus, B15.1-1953	*1.00*
Regulations for the Installation of Blower and Exhaust Systems for Dust, Stock, and Vapor Removal, Z33.1-1950	*.25*
Industrial Lighting, A11.1-1952	*.50*
National Electrical Safety Code, C2 (NBS Handbook H30)	*1.75*
National Electrical Code, C1-1953 (NBFU 70)	*.10*
Safety Code for the Prevention of Dust Explosions in Woodworking Plants, Z12.5-1953 (NFPA 663)	*.25*
Safety Code for Floor and Wall Openings, Railings, and Toe Boards, A12-1932	*.50*
Safety Code for the Use, Care, and Protection of Abrasive Wheels, B7.1-1947	*.75*
Grinding, Polishing, and Buffing Equipment Sanitation, Z43-1941	*.75*

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5501
The Magazine of Standards
In Two Parts — Part 2

price list and index

American Standards

spring 1955

Table of Contents

	Page
How to Purchase American Standards	3
Index to Titles of American Standards	4

Numerical List of American Standards

Subject	Project Letter	
Automotive	D	28
Chemical Industry	K	30
Civil Engineering and Construction	A	17
Commercial Standards	CS	43
Drawings, Symbols, and Abbreviations	Y	38
Electrical Engineering	C	23
Ferrous Materials and Metallurgy	G	28
Mechanical Engineering	B	21
Mining	M	33
Miscellaneous	Z	39
Nonferrous Materials and Metallurgy	H	29
Office Equipment and Supplies	X	38
Photography and Motion Pictures	PH	33
Pulp and Paper Industry	P	33
Rubber	J	30
Textile Industry	L	31
Wood Industry	O	33

American Safety Standards	44
American Standards on Consumer Goods	46
Special Publications	48

Abbreviations

AAN	American Association of Nurserymen, Inc
AAR	Association of American Railroads
AATCC	American Association of Textile Chemists and Colorists
AASHO	American Association of State Highway Officials
ACI	American Concrete Institute
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects
AIEE	American Institute of Electrical Engineers
API	American Petroleum Institute
ASRE	American Society of Refrigerating Engineers
ASTM	American Society for Testing Materials
AWWA	American Water Works Association
BLS	U. S. Bureau of Labor Statistics Bulletin
BMTP	U. S. Bureau of Mines Technical Paper
CGA	Compressed Gas Association
CS	Commercial Standard
IPCEA	Insulated Power Cable Engineers Association
IRE	Institute of Radio Engineers
ITE	Institute of Traffic Engineers
JAN	Joint Army-Navy Specification
NBFU	National Board of Fire Underwriters
NBS	National Bureau of Standards
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
R	Reaffirmed
RTMA	Radio-Electronics-Television Manufacturers Association
SAE	Society of Automotive Engineers
SPR	Simplified Practice Recommendation

Legend

A star (★) indicates new and revised standards approved since the last (March, 1954) issue of this list

A dagger (†) indicates American Standards published by ASA to which quantity prices apply

American Standards Association

• *What It Is*

The American Standards Association, Incorporated, is the American clearing-house for standards activity on the national level. Founded in 1918, it is a federation of more than 100 trade associations, technical societies, professional groups, and consumer organizations. Some 2300 companies are affiliated with the ASA as company members.

The ASA also represents American business as the American member of the 33-nation International Organization for Standardization (ISO).

• *Who Uses American Standards*

These standards are used widely by industry and commerce and often by municipal, state, and federal governments:

—Manufacturers use them to facilitate production operations or lower production costs, or to eliminate controversies between buyer and seller, or to raise the level of their industry by eliminating misrepresentation.

—Consumer groups use them as a yardstick to measure the merit of the things they buy.

—Government agencies use them in their capacity as buyers or as protectors of the public interest.

• *How American Standards Are Developed*

The ASA provides the machinery for creating voluntary standards. It serves to eliminate duplication of standards activities and to weld conflicting standards into single, nationally accepted standards under the designation "American Standard."

Each of the 1451 standards approved to date by the ASA and listed in this booklet represents general agreement among maker, seller, and user groups as to the best current practice with regard to some specific problem. Thus the completed standards cut across the whole fabric of production, distribution, and consumption of goods and services. Manufacturers, consumers, technical organizations, and governmental agencies — all substantially interested and affected groups — are represented on the committees which develop and regularly revise American Standards.

• *ASA's Magazine*

The Magazine of Standards keeps members of the ASA in touch with standards activities. This monthly publication presents up-to-date news of world-wide standards activities and articles on the practical application of standards in industry.

A special 14-rod binder stamped in gold "*The Magazine of Standards,* Volume 26, 1955" makes it possible to keep issues together for easy reference. Stiff covers are in black imitation leather. Volume lies flat when opened. Price $2.50 per copy.

How to Purchase American Standards

American Standards listed in this booklet can be purchased by sending your order to the American Standards Association, Incorporated, 70 East 45 Street, New York 17, N. Y. Company Members of ASA are entitled to receive copies of new American Standards as part of their membership service. Full information about membership in ASA is available on request.

All prices include postage charges, except when first class, air mail, or special delivery service is requested. Please send cash with small orders to simplify bookkeeping. To expedite handling your order, please indicate symbol designation for each item requested. For delivery in New York City, please include New York City sales tax.

Prices in this list are effective as of January 1, 1955, subject to change without notice.

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Petroleum Products (pp 39-40)	20.00
Safety Standards (pp 44-46)	50.00
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In addition to American Standards, standards of other organizations in the United States and abroad can be purchased from the American Standards Association. Minimum charge for any order, 25 cents.

Index to Titles of American Standards

The following is an index to subject words in the titles of American Standards. These standards are listed on pages 17-43, under the general subject in which they are classified; for example, Civil Engineering, A; Mechanical Engineering, B; Electrical Engineering, C. For a complete list of subjects and their symbols, see Table of Contents, page 1. The standards are listed in alphabetical-numerical sequence. Thus American Standard B5.20-1947 can be found under section B—Mechanical Engineering, in numerical order under B5. The number following the hyphen is the year in which the standard was approved by the American Standards Association.

— A —

Abbreviations (*see also* Symbols)
  drawings ..... Z32.13-1950 (*see* Y32)
  scientific and engineering terms ..... Z10.1-1941 (*see* Y1)
Abrasive wheels, safety code B7.1-1947
Abrasives, bonded, markings B5.17-1949
Accident prevention—*see* Safety standards
Accuracy of engine lathes B5.16-1952
Acetate fabrics L22
Acoustics
  audiometers Z24.5-1951, Z24.12-1952, Z24.13-1953
  earphones, calibrations Z24.9-1949
  hearing aid characteristics Z24.14-1953
  loudspeaker testing C16.4-1942
  microphones
    calibration Z24.4-1949, Z24.11-1954
    pressure Z24.8-1949
  noise measurement Z24.7-1950, Z24.10-1953, Z24-X-2
  sound level meters Z24.3-1944
  symbols, letter Y10.11-1953
  terminology Z24.1-1951
Adapters, machine tools B5.5-1954, B5.11-1954
Adding machine paper rolls X2.4.2-1954
Administrative requirements for building codes A55.1-1948
Aeronautical sciences, letter symbols Y10.7-1954
Aggregates
  abrasion test A37.7-1954
  amount of material finer than No. 200 sieve A37.4-1951
  clay lumps A37.28-1948
  inorganic for interior plaster A107.1-1954
  sieve analysis, fine and coarse A37.8-1947
  soundness A37.23-1948
  specific gravity and absorption A37.5-1943, A37.6-1943
  surface moisture A37.21-1948
  swell characteristics A37.66-1948
  unit weight A37.16-1948
Air-conditioning symbols, graphical ..... Z32.2.4-1949 (see Y32)
Air cylinders and adapters, rotating B5.5-1954
Air gaps in plumbing systems A40.4-1942
Allowable concentrations of toxic dusts and gases—*see* Toxic dusts and gases
Alloys of lead, tin, antimony, and copper K5-1922
Antennas
  definitions C16.21-1954
  testing C16.11-1949
Aprons
  safety
    asbestos L18.14-1944
    flame-resistant fabric L18.21-1945
    leather L18.1-1944
  women's industrial
    bungalow L17.1-1944
    long style L17.3-1944
Arbors B5.18-1953
Architectural plans, graphical electrical symbols Y32.9-1943
Ash, test for A37.68-1948
Asphalt
  cement, road A37.71-1954
  cut-back A37.45-1951, A37.53-1948, A37.54-1948
  emulsified A37.42-1951, A37.55-1951
  felt, asbestos, roofing A109.4-1955
  felt, roofing A-109.2-1955
  heating loss A37.32-1948
  plank A37.48-1951
  primer, for use with A109.1-1955
  solid, handled in fragments A37.72-1954
  spot test A37.67-1948
Attachment plugs and receptacles, electrical C73
Audiometers Z24.5-1951, Z24.12-1952, Z24.13-1953
Automatic stations C37.2-1945
Automobiles (*see also* Traffic)
  glass, safety Z26.1-1950
  inspection requirements D7.1-1941
  radio interrupters and rectifiers C16.16-1949
  trucks, industrial power, safety code B56.1-1950

— B —

Backflow preventers in plumbing systems A40.6-1943
Bakery equipment, safety code Z50.1-1947
Ball and roller bearings
  gaging practice B3.4-1950
  mounting B3.8-1951, B3.9-1951
  tolerances B3.5-1951
Bars
  brass H8.1-1953, H33.1-1954
  concrete reinforcement
    axle-steel G43.1-1942
    billet-steel A50.1-1939
    fabricated steel G44.1-1942
    rail-steel A50.2-1936
  copper-base alloy H7.1-1954
  electrolytic copper wire H17.2-1943
  lake copper wire H17.1-1942
  refined iron G12-1936
  zinc coating G8.1-1947
Batteries
  dry cell C18.1-1954
  storage C40-1928
Bearings and bearing metals
  ball and roller
    gaging practice B3.4-1950
    mounting B3.8-1951, B3.9-1951
    tolerances B3.5-1951
  bridge and other structural uses H31.1-1954
  locomotive H29.1-1953

Bedding
filling materials, definitions
cotton L12.1-1946
miscellaneous L12.4-1946
wool L12.2-1946
sheets and pillowcases L4.1-1948
Benzene
allowable concentration Z37.4-1941
test for, by ultraviolet spectrophotometry Z11.70-1951
Bibs (safety)
asbestos L18.15-1944
leather L18.2-1944, L18.6-1944
Binders board CS50-34
Bitumen and bituminous materials
determination of A37.3-1954
ductility A37.11-1945
float test A37.2-1951
mixing plant inspection A37.43-1951
penetration test A37.1-1954
percentage test A37.64-1948
proportion soluble in carbon tetrachloride A37.12-1943
protective coatings A109.11-1955
saturated fabrics A109.12-1955
softening point (ring-and-ball method) A37.10-1943
Blades, straight cut-off B5.21-1949
Blankets, rubber insulating J6.4-1950
Blanks, circular and dovetail forming B5.7-1954
Blower and exhaust systems Z33.1-1950
Body sizes for boys' garments L11.1-1941
Boilers Z21.13.1-1951, Z21.13.1a-1954, Z21.33-1950
Bolts and bolting materials
alloy steel G17.2-1944, G38.1-1952
internal wrenching B18.8-1950
plow B18.9-1950
round head B18.5-1952
screw threads B1.1-1949, B1.4-1945
square and hexagon B18.2-1952
track B18.10-1952
Bookcloths CS57-40
Braid L13.1-1942
Brick
building A75.1-1953, A78.1-1952, A98.1-1953, A99.1-1953
paving A37.15-1948
sampling and testing A82.1-1951
sewer A100.1-1954
Bridge
bearings, rolled copper-alloy H31.1-1954
steel G24.1-1947
Broilers, gas unit Z21.3-1940, Z21.3a-1946
Brushes, graphite C64-1935
Buffing—*see* Grinding, polishing, and buffing
Building code requirements
administrative A55.1-1948
earthquakes A58.1-1945
excavations and foundations A56.1-1952
gypsum concrete, reinforced A59.1-1954
joist construction, steel A87.1-1947
light A53.1-1946
loads, minimum design A58.1-1945
masonry A41.1-1953
reinforced concrete A89.1-1951
signs and outdoor display structures A60.1-1949
steel, structural A57.1-1943
ventilation A53.1-1946
Building construction safety code A10.2-1944
Building exits code A9.1-1953
Building materials—*see* specific subjects; e.g., Brick, Concrete, Dimensions, Steel, Tile, etc
Bulbs, lamp C78
Bushings, apparatus, electrical C37.4a-1954, C57.12b-1954, C76.1-1943
Butadiene—*see* Petroleum products and lubricants

— C —

Cable—*see* Wire (including cable)
Cableways, conveyors, and related equipment, safety code B20.1-1947
Calcium chloride A37.37-1951, A37.44-1951
Cameras and camera equipment C16.23-1954, PH3, PH22
Cans—*see* Containers
Capacitances C60
Capacitors C55.1-1951
Carbon disulfide, allowable concentration Z37.3-1941
Carbon monoxide, allowable concentration Z37.1-1941
Cards, index and record-keeping X2.4.1-1951
Cast iron
gray-iron castings G25.1-1948, G27.1-1942
malleable iron
castings G48.1-1953
cupola G49.1-1948
pipe and piping—*see* Pipe and Piping
Cement
hydraulic
mortars A1.4-1950, A1.14-1954
normal consistency A1.11-1950
sampling A1.2-1948
soundness over boiling water A1.13-1950
specific gravity A1.12-1948
time of setting A1.15-1954, A1.17-1954
masonry A1.3-1954
oxychloride A88
portland A1.1-1954
air content A1.9-1954
air-entraining A1.16-1954
autoclave expansion A1.8-1954
chemical analysis A1.5-1954, A1.6-1950
fineness A1.7-1954
heat of hydration A1.10-1954
plastering A42.3-1946
stucco A42.2-1946
sand A37.34-1948
Certification procedures Z34.1-1947
Chains, transmission B29
Chair, posture, definition X2.1.4-1954
Charts and graphs
engineering and scientific charts for lantern slides ..... Z15.1-1932 (*see* Y15)
engineering and scientific graphs for publications ..... Z15.3-1948 (*see* Y15)
time-series charts ..... Z15.2-1938 (*see* Y15)
Chemical engineering, letter symbols ..... Z10.12-1946 (*see* Y10)
Chemicals, photographic PH4
Chip board CS49-34
Chromic acid and chromates, allowable concentration Z37.7-1943
Chucks and chuck jaws for turret lathes and automatic lathes B5.8-1954
Cinematography PH22
Circuit breakers C37
Circular and dovetailed forming tool blanks B5.7-1954
Cloth, shrinkage, woven cotton L10-1936
Clothing
body sizes for boys' garments L11.1-1941
flammability of textiles L14.69-1952
linemen's rubber protective J6
protective occupational (safety) L18
women's industrial L17
Coal
classification M20.1-1938, M20.2-1937
cubic-foot weight test K20.1-1956
definitions, bituminous and subbituminous M20.4-1939
mines
drainage M6-1931
explosives M14-1930
installing and using electrical equipment M2.1-1951

Coal *(Continued)*
rock-dusting M13-1925
tracks; frogs, switches, and turnouts.. M7.1-1935, M7.2-1935
transportation, safety code M15-1931
sampling and analysis K18.1-1948, K46-1940
screen analysis, sizes M20.3-1944
Coats (safety)
asbestos L18.17-1944
flame-resistant fabric L18.23-1945
leather L18.4-1944
Coke
cubic-foot weight test K20.2-1936
sampling and analysis K18.1-1948
shatter test K20.4-1948
tumbler test K20.3-1951
volume of cell space K20.5-1936
Color *(see also* Pigments)
accident prevention signs Z35.1-1941
building exits code A9.1-1953
cast stone CS53-35
chips Z55.1-1950
codes, electronic components C16.14-1949
foundry patterns of wood B45.1-1932
gas mask canisters, identification K13.1-1950
grays, standard Z55.1-1950
marking physical hazards, identification of equipment Z53.1-1953
measurement Z58.7-1952, Z58.7.2-1951, Z58.7.3-1951
nomenclature and definitions, colorimetry field.. Z58.1.2-1952
piping systems, identification A13-1928
refined oil Z11.35-1953
Colorfastness L14, L22
Commercial standards
binders board CS50-34
bookcloth CS57-40
chip board CS49-34
gage blanks B47.1-1941
marking
gold filled and rolled gold plate Z31-1933
karat gold CS67-38
silver in combination with gold CS51-35
mattresses
hospital CS54-35
institution CS55-35
stone, cast, colors, and finishes for CS53-35
wood, foundry patterns, color system B45.1-1932
Compressed air machinery and equipment, safety code.. B19-1938
Concrete
building brick A75.1-1953
compression testing A37.17-1951, A37.18-1951, A37.20-1951, A37.24-1951
cores A37.31-1951
flexure testing A37.17-1951, A37.20-1951, A37.22-1951, A37.24-1951
floors, forms A48-1932
freshly mixed, air content A37.70-1954
gypsum A59.1-1954
masonry units A73.1-1942, A79.1-1953, A80.1-1953, A81.1-1953, A84.1-1953
portland cement A37.26-1948, A37.29-1954
ready-mixed A37.69-1951
sampling A37.30-1954
sands, organic impurities A37.19-1951
steel reinforcement
bars A50.1-1939, A50.2-1936 G43.1-1942, G44.1-1942
building regulations A89.1-1951
spirals A38-1933
wire A50.3-1936, G45.1-1942
voids in fine aggregate A19-1937
weight and air content A37.27-1948
Conductors, bare electrical—*see* Wire (including cable)
Conduit C80
Construction safety code A10.1-1951, A10.2-1944
Containers
compressed gas, marking Z48.1-1954
motor oil B64
Control apparatus, electrical
automatic stations C37.2-1945
industrial C19.1-1945
railway C48-1931
Converters, pool cathode mercury-arc power C34.1-1949
Conveyors, cableways, and related equipment, safety code B20.1-1947
Cooking utensils Z61.1-1949
Copper
bars—*see* Bars
battery assay K12-1921
bearings, plates, sheets for bridges H31.1-1954
fittings B16.22-1951
pipe H26.1-1954
rods C7.7-1953, H7.1-1954
water tube H23.1-1954
wire—*see* Wire (including cable)
Cotton mats, curing concrete pavements A37.60-1948
Coveralls
safety, flame-resistant fabric L18.25-1945
women's industrial L17.2-1944
Cranes, safety code B30.2-1943
Crystals, piezoelectric C16.17-1951
Cups, measuring Z61.1-1949
Cylinders, compressed gas
valve outlet and inlet connections B57.1-1953

— D —

Decimal system
gages, wire and sheet metal B32.1-1952
inch-millimeter conversion B48.1-1933
numerical values, rounding off Z25.1-1940
Definitions
acoustical measurements, terminology Z24.1-1951
bedding and upholstery, filling materials
cotton L12.1-1946
miscellaneous L12.4-1946
wool L12.2-1946
chair, posture X2.1.4-1954
colorimetry field Z58.1.2-1952
cooking utensils Z61.1-1949
crystals, piezoelectric C16.17-1951
electrical C42-1941
film, motion picture, nomenclature.... Z22.56-1947 (*see* PH22)
fuel, solid and liquid Z67.1-1953
gear, nomenclature B6.10-1954, B6.12-1954
glass bulbs, nomenclature C79.1-1954
glass flares, nomenclature C79.2-1954
illuminating engineering nomenclature Z7.1-1942
milling cutters B5c1-1947, B5.3-1950
nuclear science and technology Z63
petroleum terms Z11.28-1953
photometry Z58.1.1-1953
radiometry Z58.1.1-1953
road and pavement materials A37.33-1954
screw threads B1.7-1949
textile materials L14.12-1954
tools, single-point B5.22-1950
wire and cable C8.1-1944
Derricks, safety code B30.2-1943
Desks, office X2.1.1-1951

Detergents (*see also* Soaps)
chemical analysis and sampling K60.21-1950
soda ash K60.11-1949
soda, caustic K60.10-1949
soda, modified K60.17-1949
sodium metasilicate K60.18-1949
sodium sesquisilicate K60.19-1949
tetrasodium pyrophosphate K60.20-1949
trisodium phosphate K60.12-1949
Dictating machines X2.5.16-1954, X2.5.17-1954, X2.5.18-1954, X2.5.19-1954
Dimensions, building materials, coordination of A62.1-1945
Drawings
abbreviations ..... Z32.13-1950 (*see* Y32)
drafting room practice ..... Z14.1-1946 (*see* Y14)
graphical symbols—*see* Symbols
graphs and charts—*see* Charts and graphs
Dresses, women's industrial L17.1-1944, L17.4-1944
Drill drivers B5.27-1951
Drinking fountains Z4.2-1942
Dry cells and batteries C18.1-1954
Dryers, gas, clothes Z21.5-1953, Z21.5a-1954
Dumbwaiters, safety code A17.1-1937, A17.3-1942
Dungarees, women's industrial L17.2-1944
Dust control, explosions, and ignitions
aluminum bronze powder Z12.11-1953
coal pneumatic cleaning plants Z12.7-1953
confectionery plants Z12.18-1953
flour and feed mills Z12.3-1953
grain elevators Z12.4-1953, Z12.13-1953, Z12.14-1943
inert gas, use of Z12.10-1943
magnesium powder Z12.15-1953
plastics industry Z12.16-1946
pulverizing systems
coal Z12.1-1946
fuel Z12.17-1946
sugar and cocoa Z12.6-1953
spice grinding plants Z12.9-1953
starch factories Z12.2-1944
sulphur Z12.12-1950
wood flour establishments Z12.8-1946
woodworking plants Z12.5-1953
Dusts and gases—*see* Toxic dusts and gases, allowable concentrations

—E—

Earphones, calibration Z24.9-1949
Earthquakes, building code requirements A58.1-1945
Electrical code, National C1-1953
Electrical machinery, rotating C35.1-1943, C50-1943
Electrical safety code, National C2
Electrical terms, definitions C42-1941

(Many standards in the electrical field also contain sections defining the terms used. These are not indexed separately. For standards in the electrical field, see specific subjects, e.g., Automatic stations; Circuit breakers; Control apparatus; etc)

Electronics
antennas
definitions C16.21-1954
testing C16.11-1949
auto, interrupters and rectifiers C16.16-1949
capacitances C60
color codes, components C16.14-1949
counter tubes, methods of testing gas filled radiation C60.11-1954
crystals, piezoelectric C16.17-1951
electron devices, methods of measuring noise C60.13-1954
equipment, components C16.15-1949
interference, measuring C63.1-1946
Electronics (*Continued*)
loudspeaker, testing C16.4-1942
meters, radio noise C63.2, C63.3
receivers
broadcast (AM), testing C16.19-1951
broadcast (FM), testing C16.12-1949, C16.12a-1951
vehicular communications, testing C16.18-1951
receiving appliances, power-operated C65.1-1954
symbols, letter, radio Y10.9-1953
vacuum tubes C60
volume measurement, electrical speech and program waves C16.5-1954
wave guides C16.21-1954
Elevators A17
Engine lathes, accuracy B5.16-1952
Escalators A17.1-1937, A17.3-1942
Excavations, building code requirements A56.1-1952
Exhaust systems Z9, Z33.1-1950
Explosives, bituminous coal mines M14-1930
Exposure computer, photographic ..... Z38.2.2-1949 (*see* PH2)
Eyes, protection of Z2-1938

—F—

Filler
cement grout A37.74-1951
mineral A37.14-1943, A37.41-1948
preformed expansion A37.49-1948
Film, photographic ..... PH1, PH22 (*see also* Processing, photographic)
Filter block A102.1-1954
Finishes, gray, industrial apparatus and equipment Z55.1-1950
Fire prevention safety standards
blower and exhaust systems Z33.1-1950
building construction and materials, fire tests A2.1-1942, A2.2-1942
building exits code A9.1-1953
dust control, explosions, and ignitions Z12
electrical code, National C1-1953
electrical safety code, National C2
lightning protection C5
mines, metal, fire fighting equipment M17-1930
pulverizing systems
coal Z12.1-1946
fuel Z12.17-1946
sugar and cocoa Z12.6-1953
welding, gas and electric Z49.1-1950
Fits and limits for engineering B4.1-1947
Flammability of clothing textiles L14.69-1952
Flash point
closed tester Z11.7-1952, Z11.24-1952
open cup A37.65-1948, Z11.6-1952
Flatirons, household automatic electric C70.1-1953
Floors and flooring
composition A88
forms, concrete joist construction A48-1932
safety code for floor openings A12-1932
Flue linings, clay, sizes A62.4-1947
Flutter content, sound recorders and reproducers Z57.1-1954
Forging and hot metal stamping B24.1-1952
Formaldehyde, allowable concentration Z37.16-1944
Foundations, building code requirements A56.1-1952
Foundries
patterns of wood (color) B45.1-1932
protection of workers D8-1932
Fryers, gas, deep fat Z21.27-1940, Z21.27a-1946
Fuel systems, pulverized Z12.17-1946
Fuels (*see also* Coal; Petroleum products and lubricants)
gaseous Z68.1-1953, Z69.1-1953
solid and liquid Z67.1-1953

Furnaces, gas
duct Z21.34-1942, Z21.34a-1954
floor, gravity and fan-type Z21.13.3-1951, Z21.13.3a-1954
gravity and forced air Z21.13.2-1951, Z21.13.2a-1952, Z21.13.2b-1954
Furniture, office X2
Furring and lathing A42.4-1950

— G —

Gages
blanks B47.1-1941
pressure and vacuum B40.1-1939
screw thread B1.2-1941
wire and sheet metal B32.1-1952
Gaging practice
ball and roller bearings B3.4-1950
splines and serrations B5.31-1953
Garment sizes, boys' L11.1-1941
Gas
appliances, approval and installation requirements
boilers Z21.13.1-1951, Z21.13.1a-1954, Z21.33-1950
broilers, unit Z21.3-1940, Z21.3a-1946
central heating Z21.13.1-1951, Z21.13.1a-1954, Z21.13.2-1951, Z21.13.2a-1952, Z21.13.2b-1954, Z21.13.3-1951, Z21.13.3a-1954, Z21.13.4-1953, Z21.13.4a-1954
connectors Z21.32-1942
conversion burners Z21.8-1948, Z21.17-1948, Z21.38-1953, Z21.39-1953
counter Z21.31-1941, Z21.31a-1954
dryers, clothes Z21.5-1953, Z21.5a-1954
fryers, deep fat Z21.27-1940, Z21.27a-1946
furnaces Z21.13.2-1951, Z21.13.2a-1952, Z21.13.2b-1954, Z21.13.3-1951, Z21.13.3a-1954, Z21.34-1942, Z21.34a-1954
gum protective devices Z21.35-1945
heaters Z21.10-1953, Z21.10a-1954, Z21.11-1954, Z21.13.4-1953, Z21.13.4a-1954, Z21.16-1951, Z21.16a-1953
hose for portable Z21.2-1949
hot plates Z21.9-1948
in buildings Z21.30-1954
incinerators Z21.6-1949, Z21.6a-1953, Z21.6b-1954
laundry stoves Z21.9-1948
ovens, baking and roasting Z21.28-1948, Z21.28a-1954
pilots, automatic Z21.20-1951
ranges
domestic Z21.1-1952, Z21.1a-1953, Z21.1b-1954
dual oven type combination Z21.37-1948
hotel and restaurant Z21.3-1940, Z21.3a-1946
refrigerators Z21.19-1942
regulators, pressure Z21.18-1954
temperature limit controls Z21.29-1941
thermostats Z21.23-1940
tubing, semi-rigid Z21.24-1941
valves
automatic control Z21.21-1952
gas burner Z21.15-1954
relief and automatic shut-off Z21.22-1935
water heating units Z21.26-1941
containers or cylinders for compressed gas
marking Z48.1-1954
valve connections B57.1-1953
inert, prevention of fire and explosion Z12.10-1943
mask canisters, identification K13.1-1950
piping, in buildings Z21.30-1954
Gaseous fuels Z68.1-1953, Z69.1-1953
Gaskets B16.20-1952, B16.21-1951
Gasoline—*see* Petroleum products and lubricants
Gears
bevel B6.8-1950
fine-pitch, inspection B6.11-1951
helical B6.7-1950
letter symbols B6.5-1954
nomenclature B6.10-1954, B6.12-1954
spur B6.1-1932, B6.7-1950
tolerance and inspection B6.6-1946
worm B6.9-1950
Generators, polyphase induction, test code C50.20-1954
Glass
bulbs, nomenclature C79.1-1954
flares, nomenclature C79.2-1954
safety, motor vehicles Z26.1-1950
Gloves
asbestos L18.9-1944, L18.10-1944
chemical-resistant L18.29-1945
leather L18.7-1944, L18.8-1944, J6.3-1945
rubber insulating J6.6-1952
Gold marking Z31-1933, CS67-38
Grade crossings, highway D8.1-1951
Grandstands Z20.3-1950
Granite block A37.35-1954, A37.39-1948, A37.40-1948
Graphical symbols—*see* Symbols
Graphs and charts—*see* Charts and graphs
Grays (color), finishes Z55.1-1950
Grease—*see* Petroleum products and lubricants
Grinding machines B5.32-1953, B5.33-1953
Grinding, polishing, and buffing equipment
sanitation Z43-1941
Grinding wheels and other bonded abrasives
markings B5.17-1949
(*see also* Abrasive wheels)
Gypsum
board
sheathing A68.1-1953
wall A69.1-1955 A97.1-1953
concrete, reinforced A59.1-1954
Keene's cement A66.1-1951
lath A67.1-1951
molding plaster A49.4-1951
partition tile or block A105.1-1954
plastering A42.1-1950
plasters A49.3-1951
specifications for A49.1-1951
testing A70.1-1953

— H —

Heads and eyes, protection of Z2-1938
Health standards—*see* Industrial health and safety standards
Hearing aids, measurement of characteristics Z24.14-1953
Heat and thermodynamics, letter symbols ..... Z10.4-1943 (*see* Y10)
Heat-power apparatus, graphical symbols ..... Z32.2.6-1950 (*see* Y32)
Heaters
electric
water C72.1-1949
gas
gravity and fan-type, vented recessed Z21.13.4-1953, Z21.13.4a-1954
room Z21.11-1954
unit Z21.16-1951, Z21.16a-1953
water Z21.10-1953, Z21.10a-1954
Heating, symbols, graphical ..... Z32.2.4-1949 (*see* Y32)
Highway—*see* Street and highway
Hoists, safety code B30.2-1943
Hoods, rubber insulator J6.2-1950

Hose
fire
cotton, rubber-lined L3.1-1941
couplings, screw threads B26-1925, B33.1-1935
line
rubber insulating J6.1-1950
Hot plates, gas Z21.9-1948
Hydraulics, letter symbols ..... Z10.2-1942 (*see* Y10)
Hydrogen sulfide, allowable concentration Z37.2-1941

— I —

Illuminating engineering nomenclature Z7.1-1942
Inch-millimeter conversion B48.1-1933
Incinerators, gas Z21.6-1949, Z21.6a-1953, Z21.6b-1954
Indiana limestone A93.1-1948
Indicating instruments, electrical C39.1-1951, C39.3-1948
Industrial health and safety standards—*see* Safety standards
Injury experience, work Z16.1-1954
Instruments, electrical
direct-acting recording C39.2-1953
indicating C39.1-1951, C39.3-1948
Insulators and insulating materials
fabricating laminated plastics, practice for C59.17-1949
gloves, rubber J6.6-1952
impact resistance, methods of test C59.11-1948
laminated round rods, methods of test C59.15-1954
laminated thermosetting products C59.16-1952
laminated tubes, methods of test C59.14-1954
mica C59.26-1954
molded, methods of test C59.1-1954
oils, sampling and testing C59.2-1944, C59.19-1952, C59.21-1951, C59.22-1951, C59.23-1951, C59.24-1951, C59.25-1951
powders, molding, methods of test C59.10-1941
protective equipment J6
resistance, electrical, methods of test C59.3-1954
rubber matting C59.4-1935
rubber tape C59.6-1952
sheet and plate materials, methods of test C59.13-1951
shellac, methods of test C59.18-1954
tests C29.1-1944
vulcanized fibre C59.20-1952
Iron—*see* Cast iron; Malleable iron

— J —

Jackets, women's industrial L17.3-1944
Jacks, safety code B30.1-1943
Jig bushings B5.6-1941
Joist construction, steel A87.1-1947

— K —

Kerosine—*see* Petroleum products and lubricants
Keys—*see* Shafting
Kitchen equipment Z61.1-1949

— L —

Ladders A14.1-1952, M12.1-1946
Lamps
bactericidal C78
bases, screw threads C44-1931
fluorescent C78, C82
glass bulbs, nomenclature C79.1-1954
glass flares, nomenclature C79.2-1954
holders and bases, screw threads C81.1-1951
incandescent C78
photographic flash Z52.43-1944
Lantern slides, charts ..... Z15.1-1932 (*see* Y15)
(*see also* Photography, apparatus)
Lathes B5.8-1954, B5.9-1954, B5.16-1952, B5.21-1949
Lathing and furring A42.4-1955
Laundry machinery and operations, safety code Z8-1941
Laws and ordinances, state Z56
Lead
allowable concentration Z37.11-1943
blue, basic sulfate K48-1941
dry red K16.1-1944
red K24-1941
white, basic carbonate K23.1-1943
white, basic sulfate K47.1-1945
Leggings (safety)
asbestos L18.16-1944
flame-resistant fabric L18.22-1945
leather L18.3-1944
Life tests of single-point tools made of materials other than sintered carbides B5.19-1946
Lighting
building code requirements A53.1-1946
industrial A11.1-1952
protective A85-1942
schools A23.1-1948
street and highway D12.1-1953
Lightning
arresters C62.1-1944
protection
buildings C5.2-1953
persons C5.1-1953
structures containing flammable liquids and gases C5.3-1953
Limestone, Indiana A93.1-1948
Limits and fits for engineering B4.1-1947
Linseed oil
boiled K35.1-1949
raw K34.1-1949
Loads, minimum design A58.1-1945
Locomotives
bearings H29.1-1953
railway, electrical machinery C35.1-1943
wearing parts H28.1-1953
Logging and sawmill safety code B13-1924
Lubricants—*see* Petroleum products and lubricants

— M —

Machine pins B5.20-1954
Machine tapers, self-holding and steep taper series B5.10-1953
Machine tools—*see* Tools, machine
Machinery, rotating electrical C35.1-1943, C50-1943
Malleable iron
castings G48.1-1953
cupola G49.1-1948
Manganese, allowable concentration Z37.6-1948
Manhole frames and covers A35.1-1941
Manlifts, safety code A90.1-1949
Marble, interior A94.1-1948
Marking
articles
gold filled and rolled gold Z31-1933
karat gold CS67-38
silver in combination with gold CS51-35
compressed gas containers Z48.1-1954
grinding wheels, bonded abrasives B5.17-1949
Masonry
building code requirements A41.1-1953
cement A1.3-1954
coordination of, basis for A62.2-1945
units A62.3-1946, A73.1-1942, A79.1-1953, A80.1-1953, A81.1-1953, A84.1-1953, A103.1-1954
Mathematical letter symbols ..... Z10f-1928 (*see* Y10)
Mattresses
hospitals CS54-35
institutions CS55-35
Mercury, allowable concentration Z37.8-1943

Metal mines
electrical equipment M24-1932
fire fighting equipment M17-1930
mechanical loading M19-1928
transportation M18-1928
Meteorology, symbols, letter Y10.10-1953
Meters
electrical indicating instruments C39
electricity (watt hour) C12
radio noise C63.2, C63.3
sound level (noise) Z24.3-1944
Methanol, allowable concentration Z37.14-1944
Methyl chloride, allowable concentration Z37.18-1949
Mica C59.26-1954
Microfilm PH3
Microphones
calibration Z24.4-1949, Z24.11-1954
pressure Z24.8-1949
Millimeter, inch, conversion B48.1-1953
Milling
cutters B5c1-1947, B5.3-1950
machines B5.18-1953
Mines, coal—*see* Coal mines
Mines, metal—*see* Metal mines
Minimum design loads in buildings A58.1-1945
Mittens (safety)
asbestos L18.11-1944, L18.12-1944, L18.20-1945
leather L18.18-1945, L18.19-1945
Modular coordination A62
Mortars
hydraulic-cement A1.4-1954, A1.14-1950
portland-cement A1.9-1954
Motion pictures PH22
Motor vehicles—*see* Automobiles
Motors, polyphase induction, test code C50.20-1954

—N—

Naphtha—*see* Petroleum products and lubricants, tests
National electrical code C1-1953
National electrical safety code C2
Nitrogen, oxides, allowable concentration Z37.15-1944
Noise measurement—*see* Acoustical measurements
Nomenclature—*see* Definitions
Nuclear science and technology Z63
Numerical values, rounding off Z25.1-1940
Nursery stock Z60.1-1952
Nuts B18.2-1952, B18.10-1952

—O—

Office equipment and supplies X2
Oil—*see* Insulators and insulating materials; Petroleum products and lubricants, tests
Oil cans B64
Ordinances—*see* Laws
Ores, screen testing M5-1932
Ovens, baking and roasting, gas Z21.28-1948, Z21.28a-1954
Overalls
leather (safety) L18.5-1944
women's industrial L17.2-1944
Oxychloride compositions A88

—P—

Paints—*see* Color; Pigments
Pans, baking Z61.1-1949
Pants, flame-resistant fabric L18.24-1945
Paper
photographic PH1
rolls for adding machines X2.4.2-1954
subgrade A37.61-1948
Paper and pulp mills, safety code P1-1936
Patterns, foundry (color) B45.1-1932
Paving materials—*see* specific headings, e.g., Asphalt; Granite block; Concrete; etc
Paving plant inspection A37.43-1951
Penetration test
bituminous materials A37.1-1954
residue A37.15-1948
Periodicals, reference data and arrangement Z39.1-1948
Petroleum products and lubricants, tests
aircraft fuels Z11.82-1953
ash content Z11.54-1947
autogenous ignition temperatures Z11.23-1932
benezene, by ultraviolet spectrophotometry Z11.70-1951
burning quality
kerosine oils Z11.17-1949
long-time burning oil for railway use Z11.19-1936
mineral seal oil Z11.18-1930
butadiene
acetylene test Z11.74-1952
boiling-point range Z11.80-1953
carbonyl content Z11.81-1953
determination of content Z11.66-1950
dimer test Z11.79-1953
nonvolatile residue Z11.76-1952
residue separation Z11.75-1952
carbon residue
(Conradson) Z11.25-1952
(Ramsbottom) Z11.47-1952
carbonizable substances
in mineral oil Z11.49-1945
in paraffin wax Z11.50-1945
cloud and pour points Z11.5-1948
color
refined oil Z11.35-1953
crankcase oil Z11.29-1935, Z11.78-1953
definition of terms Z11.28-1953
distillation of crude petroleum Z11.32-1952
flash points Z11.6-1952, Z11.7-1952, Z11.24-1952
fuel oil
sediment Z11.58-1949
thermal value Z11.14-1950
gas oils Z11.26-1953
gasoline
detection, free sulfur Z11.21-1936
distillation Z11.10-1953, Z11.11-1953, Z11.77-1952
oxidation stability Z11.60-1949, Z11.63-1949
tetraethyl lead in Z11.48-1949
gum content in fuels Z11.36-1953
gravity Z11.31-1952
grease, analysis Z11.16-1948
insulating oils C59.2-1944, C59.21-1951, C59.22-1951, C59.23-1951, C59.24-1951, C59.25-1951
interfacial tension, oil against water Z11.64-1950
kerosine
distillation Z11.10-1953
oils, burning quality Z11.17-1949
lubricating grease
cone penetration Z11.3-1952
dropping point Z11.51-1948
oxidation stability Z11.65-1950
viscosity Z11.72-1951
lubricating oils
analysis for metals Z11.56-1949
precipitation number Z11.30-1952
sodium Z11.73-1951
sulfated residue Z11.57-1949, Z11.68-1951
measurement tables, ASTM-IP Z11.83-1953
motor fuels, knock characteristics Z11.37-1953, Z11.69-1953
naphtha, distillation Z11.10-1953
neutralization value, electrometric titration Z11.59-1952
olefinic plus aromatic hydrocarbons in distillates Z11.71-1951

Petroleum products and lubricants, tests *(Continued)*
- paraffin wax
  - melting point Z11.4-1942
  - oil content Z11.52-1953
- petrolatum
  - melting point Z11.22-1949
  - pharmaceutical Z11.61-1949
- plant spray oils
  - distillation Z11.43-1952
  - unsulfonated residue Z11.41-1952
- sampling Z11.33-1935
- saponification number Z11.20-1952, Z11.67-1952
- Stoddard solvent Z11.42-1952
- sulfur, bomb method Z11.13-1952
- toluene, by ultraviolet spectrophotometry Z11.70-1951
- vapor pressure Z11.44-1952
- viscosity Z11.2-1953, Z11.39-1943, Z11.45-1953, Z11.46-1953, Z11.53-1953
- water Z11.9-1947

Photography
- apparatus PH3
- films PH1
- motion pictures PH22
- papers PH1
- plates PH1
- processing PH4
- sensitometry PH2
- television, picture area, film PH22

Photometric standards Z7.1-1942
Photometry definitions Z58.1.1-1953
Physics, letter symbols ..... Z10.6-1948 (*see* Y10)
Pigments (*see also* Color)
- alkalinity or acidity K51-1941
- bleeding K52-1941
- bone black K36.1-1947
- chrome green K28.1-1947
- chrome oxide green K37.1-1946
- chrome yellow and orange K27.1-1947
- coarse particles K42.1-1945
- hygroscopic moisture K53-1941
- iron blue K29.1-1947
- iron oxide, mineral K25-1941
- lampblack K26.1-1947, K55.1-1954
- lead
  - blue, basic sulfate K48-1941
  - dry red K16.1-1944
  - red K24-1941
  - white, basic carbonate K23.1-1943
  - white, basic sulfate K47.1-1945
- mercuric oxide, dry K59-1941
- oil absorption K54-1941
- para red toner K49.1-1954
- specific gravity K41-1953
- tinting strength
  - mass color K57-1953
  - white K56-1941
- titanium dioxide K45-1941
- white, analysis K15.1-1947
- yellow, orange, and green K58.1-1954
- yellow, orange, red, and brown K44.1-1951
- zinc oxide K22.1-1944
- zinc yellow (zinc chromate), C.P. K50.1-1949

Pillowcases L4.1-1948
Pins, machine B5.20-1954
Pipe and piping (*see also* Plumbing and plumbing equipment; Tubes and tubing)
- brass, red H27.1-1954
- cast iron
  - cement mortar lining A21.4-1953
  - culvert G26.1-1942
  - gas A21.3-1953, A21.7-1953, A21.9-1953
- metal molds A21.6-1953

Pipe and Piping *(Continued)*
- sand-lined molds A21.8-1953
- soil A40.1-1935
- strength and thickness, computation A21.1-1939
- threaded, for drainage, vent, and waste services A40.5-1943
- water and other liquids A21.2-1953
- clay A106.1-1954
- copper H26.1-1954
- flanges and fittings
  - alloy steel castings G36.1-1944
  - bolting materials, alloy steel G17.2-1944, G38.1-1952
  - brass B16.18-1950, B16.23-1953
  - brass or bronze
    - 125 lb B16.15-1947
    - 150 and 300 lb B16.24-1953
    - 250 lb B16.17-1949
  - carbon steel castings G17.1-1944
  - cast iron
    - all sizes, maximum WSP, 25 lb per sq in. B16b2-1931
    - all sizes, maximum WSP, 250 lb per sq in. B16b-1944
    - class 125 ..... B16.1-1948
    - 800 lb hydraulic B16b1-1931
    - mechanical joint A21.11-1953
    - refrigerant B16.16-1948
    - screwed drainage B16.12-1953
    - screwed, maximum WSP, 125 and 250 lb per sq in. B16.4-1949
    - 3 inch to 12 inch, 250 psi A21.10-1952
  - copper and bronze solder joint B16.22-1951
  - face-to-face dimensions, ferrous welding end valves B16.10-1939
  - ferrous plugs, bushings, locknuts with pipe threads B16.14-1949
  - forged or rolled steel G17.3-1947, G37.1-1949 G46.1-1947
  - gaskets B16.20-1952, B16.21-1951
  - malleable iron screwed
    - 150 lb B16.3-1951
    - 300 lb B16.19-1951
  - refrigerant expansion valves B60.1-1950
  - refrigeration flare type B70.1-1954
  - steel B16.5-1953, B16.9-1951, B16.11-1946
- identification system A13-1928
- pressure code B31.1-1951, B31.1.8-1952, B31.1a-1953
- steel
  - seamless B36.21-1950, B36.22-1950, B36.24-1950, B36.25-1950
  - stainless B36.19-1952
- symbols, graphical ..... Z32.2.3-1949 (*see* Y32)
- threads B2.1-1945
- welded
  - austenitic stainless B36.26-1950
  - electric-fusion B36.4-1942, B36.9-1950, B36.11-1942
  - electric resistance B36.5-1950
  - lap-welded and seamless B36.3-1950
  - open-hearth iron B36.26-1950
  - steamless steel B36.1-1950
  - spiral, steel or iron B36.16-1945
  - wrought-iron B36.2-1950
  - zinc-coated B36.20-1951
- wrought-steel and wrought-iron B36.10-1950

Pitch, coal-tar A37.38-1948, A37.57-1948, A109.6-1955, A109.7-1955
Plasters and plastering
- aggregates A107.1-1954
- gypsum A42.1-1955, A49.3-1951, A49.4-1951
- portland cement A42.3-1946

Plastics—*see* Insulators and insulating materials
Plates
- photographic PH1
- steel G20-1939, G40.1-1943

Plugs and receptacles, electrical C73

Plumbing and plumbing equipment (*see also* Pipe and piping) A40
symbols, graphical ..... Z32.2.2-1949 (*see* Y32)
Poles, tubular steel C13-1926
Poles, wood, specifications and dimensions O5.1-1948
Polishing—*see* Grinding, polishing and buffing equipment
Power transmission, mechanical, safety code B15.1-1953
Preferred numbers Z17.1-1936
Preferred thickness for uncoated thin metals B32.1-1952
Presses, safety codes
graphic arts B65.1-1954
power, hand, foot B11.1-1948
Pressure piping B31.1-1951, B31.1.8-1952, B31.1a-1953
Primer
for use with asphalt A109.1-1955
Printing equipment, photographic PH3
Privy, sanitary Z4.3-1935
Processing, photographic PH4
Projection equipment, photographic PH3, PH22
Pulverizing systems
coal Z12.1-1946
fuel Z12.17-1946
sugar and cocoa Z12.6-1953
Pumps, lubricating and coolant, mounting dimensions B5.28-1952
Punch and die sets for two-post punch press tools B5.25-1950

— Q —

Quality control Z1

— R —

Radio — *See* Electronics
Radiometry definitions Z58.1.1-1953
Railings and toe boards A12-1932
Railroad
grade crossing protection D8.1-1951
symbols, graphical ..... Z32.2.5-1950 (*see* Y32)
Railway
electric control apparatus C48-1931
locomotives, electrical machinery C35.1-1943
Ranges
electric, domestic C71.1-1950
gas
domestic Z21.1-1952, Z21.1a-1953, Z21.1b-1954
dual oven type combination Z21.37-1948
hotel and restaurant Z21.3-1940, Z21.3a-1946
Rayon fabrics L22
Reactors C57
Reamers B5.14-1949
Receivers
broadcast (AM), testing C16.19-1951
broadcast (FM), testing C16.12-1949
vehicular communications, testing C16.18-1951
Receptacles and plugs, electrical C73
Recorders and reproducers, sound, flutter content Z57.1-1954
Recording instruments, electrical C39.2-1953
Reflectances of office furniture X2.1.3-1954
Refrigeration, mechanical
expansion valves, rating and testing B60.1-1950
fittings, flare type B70.1-1954
safety code B9.1-1953
shipboard installation B59.1-1950
Refrigerators
household
automatic B38.1-1944, B38.2-1944
gas Z21.19-1942
ice B38c1-1931
Regulators C57
Relays C37.1-1950
Respiratory organs, protection Z2-1938
Rivets and riveting material
large B18.4-1950
small solid B18.1-1953
steel G21-1939, G28.1-1942, G42.1-1942
Road and paving materials—*see* specific headings, e.g., Aggregates; Bitumen and bituminous materials; Definitions; Filler; Tar; etc
Rock, toughness test A37.73-1951
Rods
aluminum, rolled C7.23-1951
brass
for screw machines H8.1-1953
leaded red H33.1-1954
copper
base alloy H7.1-1954
hot-rolled C7.7-1951
Roofing
felt
asphalt A109.2-1955
coal-tar A109.3-1955
asbestos, asphalt-saturated A109.4-1955
asbestos, asphalt-saturated and coated A109.5-1955
fabrics, bituminous-saturated A109.10-1955
mineral surfacing
granular, sieve analysis A109.3-1955
nongranular, sieve analysis A109.9-1955
Rope
leaf and bast fibers L14.45-1953
wire M11-1927
Rosin, determination of toluol insoluble matter K21.1-1953
Rotating air cylinders and adapters B5.5-1954
Rotating electrical machinery C35.1-1943, C50-1943
Rounding off numerical values Z25.1-1940
Rubber
matting C59.4-1935
mills and calenders, safety code B28.1-1949
products; test methods J1.1-1955
protective equipment J6
tape, insulating C59.6-1952
vulcanized, test methods J2.1-1953, J3.1-1942, J4.1-1954, J5.1-1954

— S —

Safety standards
abrasive wheels B7.1-1947
accident prevention signs Z35.1-1941
automobiles, inspection D7.1-1941
bakery equipment Z50.1-1947
blower systems Z33.1-1950
buffing equipment sanitation Z43-1941
building construction and materials, fire tests A2.1-1942, A2.2-1942
building exits code A9.1-1953
cableways B20.1-1947
clothing, protective occupational L18
coal mines
bituminous, explosives M14-1930
electrical equipment M2.1-1951
rock-dusting M13-1925
transportation M15-1931
color code for marking physical hazards Z53.1-1953
compiling
accident causes Z16.2-1941
injury experience, work Z16.1-1954
compressed air machinery and equipment B19-1938
construction code A10.1-1951, A10.2-1944
conveyors B20.1-1947
cranes B30.2-1943
derricks B30.2-1943
drinking fountains Z4.2-1942
dumbwaiters A17.1-1937, A17.3-1942
dust control, explosions, and ignitions Z12

Safety standards *(Continued)*
- electrical code, National C1-1953
- electrical safety code, National C2
- elevators A17
- escalators A17.1-1937, A17.3-1942
- exhaust systems Z9, Z33.1-1950
- flammability of clothing textiles L14.69-1952
- floor openings A12-1932
- forging and hot metal stamping B24.1-1952
- foundries B8-1932
- gas containers or cylinders
  - marking of compressed Z48.1-1954
  - valve connections B57.1-1953
- gas mask canisters K13.1-1950
- glass, safety, motor vehicles Z26.1-1950
- grade crossings, highways D8.1-1951
- grandstands Z30.3-1950
- grinding equipment sanitation Z43-1941
- grinding wheels, bonded abrasives B5.17-1949
- heads and eyes, protection Z2-1938
- hoists B30.2-1943
- jacks B30.1-1943
- ladders A14.1-1952, M12.1-1946
- laundry machinery and operations Z8-1941
- lighting
  - industrial A11.1-1952
  - protective A85-1942
  - schools A23.1-1948
  - street and highway D12.1-1953
- lightning protection C5
- logging code B13-1924
- manlifts A90.1-1949
- metal mines
  - electrical equipment M24-1932
  - fire fighting equipment M17-1930
- paper and pulp mills P1-1936
- piping
  - gas, installation Z21.30-1954
  - identification systems A13-1928
  - pressure code B31.1-1951, B31.1.8-1952, B31.1a-1953
- polishing equipment sanitation Z43-1941
- presses
  - graphic arts B65.1-1954
  - power, hand, foot B11.1-1948
- privy, sanitary Z4.3-1935
- protective equipment for electrical workers J6
- pulverizing systems
  - coal Z12.1-1946
  - fuel Z12.17-1946
  - sugar and cocoa Z12.6-1953
- railings and toe boards A12-1932
- refrigeration, mechanical B9.1-1953, B59.1-1950
- rubber industry, mills and calenders B28.1-1949
- sanitation, industrial Z4.1-1935
- sawmill code B13-1924
- shoes, safety Z41
- statistics, accident Z16
- tanks, open-surface Z9.1-1951
- tents Z20.3-1950
- textile code L1.1-1947
- tools, machine, electrical standards C74-1942
- toxic dusts and gases, allowable concentrations Z37
- traffic
  - automobiles, inspection D7.1-1941
  - control devices D6.1-1948
  - control signal heads, adjustable face D10.1-1951
  - glass, safety, motor vehicles Z26.1-1950
  - grade crossing protection D8.1-1951
  - signal controllers D11.1-1943, D13.1-1950
- transmission, mechanical power B15.1-1953
- trucks, industrial power B56.1-1950
- ventilation, open-surface tanks Z9.1-1951

Safety standards *(Continued)*
- wall openings A12-1932
- welding, gas and electric Z49.1-1950
- window cleaning A39-1933
- wire rope for mines M11-1927
- woodworking machinery O1.1-1954
- x-rays, industrial use Z54.1-1946

Sand
- cement A37.34-1948
- coal and lignite in A37.25-1948
- organic impurities A37.13-1951

Sanitation, industrial Z4.1-1935
School lighting A23.1-1948
Screw threads
- acme B1.5-1945, B1.8-1952
- buttress B1.9-1953
- definitions B1.7-1949
- fire hose couplings B26-1925, B33.1-1935
- gages and gaging B1.2-1941
- pipe *(see also* Pipe and piping, flanges and fittings) B2.1-1945
- rolled, for lamp holders and bases C81.1-1951
- straight, for high-temperature bolting B1.4-1945
- symbols, letter B1.7-1949
- taps B5.4-1948
- unified B1.1-1949
- valve connection, cylinders B57.1-1953

Screws
- hexagon and square B18.2-1952
- slotted and recessed head, machine, cap, wood, tapping, and headless types B18.6-1947
- socket set and socket head B18.3-1954

Sensitometry, photographic PH2
Serrations, involute B5.26-1950, B5.31-1953
Shafting
- couplings, hydroelectric units B49.1-1947
- Woodruff keys B17f-1930

Sheet metal gages B32.1-1952
Sheets
- uncoated wrought-iron G23-1939
- zinc-coated
  - iron or steel G8.2-1951
  - wrought-iron G8.8-1937

Sheets (bedding) L4.1-1948
Shellac, methods of test C59.18-1954
Shirts, women's industrial L17.3-1944
Shoes, safety Z41
Shrinkage, woven cotton cloth L10-1936
Sieve analysis
- mineral surfacing, granular, roofing A109.8-1955
- mineral surfacing, nongranular, roofing A109.9-1955

Sieves, testing Z23.1-1939
Signs
- accident prevention, industrial Z35.1-1941
- building code requirements A60.1-1949

Silver with gold, marking CS51-35
Single-point tools B5.19-1946, B5.22-1950
Slacks, women's industrial L17.2-1944
Sleeves (safety)
- asbestos L18.15-1944
- leather L18.2-1944, L18.6-1944
- rubber J6.5-1950

Sleeving, tubular L13.1-1942
Soaps *(see also* Detergents)
- bar K60.2-1953
- chip K60.1-1952
  - compound K60.8-1949
  - olive oil K60.15-1949
  - palm oil K60.16-1953
- powdered K60.3-1952
  - alkaline K60.5-1949
  - built K60.7-1949
  - compound K60.9-1954

Soaps *(Continued)*
- salt-water K60.13-1949
- toilet
  - liquid K60.14-1952
  - milled K60.6-1949
  - white floating K60.4-1949

Soda
- ash K60.11-1949
- caustic K60.10-1949
- modified K60.17-1949

Sodium chloride A37.56-1948
Sodium metasilicate K60.18-1949
Sodium sesquisilicate K60.19-1949
Soils
- cement mixtures A37.50-1948, A37.51-1948, A37.52-1948, A37.58-1948
- centrifuge moisture equivalent A37.46-1948
- field moisture equivalent A37.47-1948

Solid and liquid fuels Z67.1-1953
Sound—*see* Acoustics
Spats (safety)
- asbestos L18.28-1945
- flame-resistant fabric L18.26-1945
- leather L18.27-1945

Spindle noses B5.9-1954, B5.11-1954, B5.18-1953
Splines, involute B5.15-1950, B5.31-1953
Spoons, measuring Z61.1-1949
Sprockets
- roller chains
  - conveyor, double-pitch B29.4-1954
  - power transmission, double-pitch B29.3-1954
- teeth B29.1-1950, B29.2-1950

State laws and ordinances Z56
Statistics
- accident Z16
- quality control Z1

Steel
- boiler G28.1-1942, G29.1-1945, G30.1-1943, G31.1-1947, G32.1-1947, G33.1-1945, G34.1-1947, G35.1-1947
- bolting material, alloy G17.2-1944
- bridges and buildings G24.1-1947
- castings G17.1-1944, G50.1-1945, G51.1-1944, G52.1-1944
- forgings G9.1-1933
- joist construction A87.1-1947
- locomotives and cars G39.1-1947
- plates G20-1939, G40.1-1943
- rivet G21-1939, G28.1-1942, G42.1-1942
- silicon G41.1-1947
- structural, design, fabrication, erection A57.1-1952
- thermal analysis Z30.2-1953
- zinc coating G8

Steel, concrete reinforcement
- bars A50.1-1939, A50.2-1936, G43.1-1942, G44.1-1942
- spirals A38-1933
- wire A50.3-1936, G45.1-1942

Stoddard solvent Z11.42-1952
Stone, cast, colors and finishes for CS53-35
Stone, slag, gravel, sand, and stone block A37.75-1951
Storage batteries C40-1928
Stoves, gas laundry Z21.9-1948
Street and highway
- lighting D12.1-1953
- traffic control D6.1-1948

Structural analysis, letter symbols ..... Z10.8-1949 (*see* Y10)
Stucco, portland cement A42.2-1946
Surface roughness B46.1-1955
Switchgear C37
Symbols (*see also* Abbreviations)
- graphical (all graphical symbol standards with "Z" numbers are listed under Y32)
  - air-conditioning Z32.2.4-1949
  - architectural plans, electrical Y32.9-1943
  - diagrams, electrical Y32.2-1954
  - electric traction Z10g5-1933
  - heat-power apparatus Z32.2.6-1950
  - heating Z32.2.4-1949
  - pipe and piping Z32.2.3-1949
  - plumbing Z32.2.2-1949
  - railroad equipment Z32.2.5-1950
  - railway signaling Z10g5-1933
  - ventilating Z32.2.4-1949
  - welding Z32.2.1-1949
- letter (for all Z10 standards turn to Y10)
  - acoustics Y10.11-1953
  - areonautical sciences Y10.7-1954
  - chemical engineering Z10.12-1946
  - electrical quantities Z10.5-1949
  - gear engineering B6.5-1954
  - heat and thermodynamics Z10.4-1943
  - hydraulics Z10.2-1942
  - illuminating and photometric Z7.1-1942
  - mathematical Z10f-1928
  - mechanics, solid bodies Z10.3-1948
  - meteorology Y10.10-1953
  - physics Z10.6-1948
  - radio Y10.9-1953
  - screw threads B1.7-1949
  - structural analysis Z10.8-1949

—T—

T-slots—their bolts, nuts, tongues, and cutters B5.1-1949
Tables, office X2.1.1-1951
Tanks, open-surface, ventilation, safety Z9.1-1951
Tapers, machine B5.10-1953
Taps, cut and ground threads B5.4-1948
Tar
- pitches A37.72-1954
- products A37.9-1954, A37.36-1948
- road A37.59-1951, A37.71-1954
- volume correction table A37.57-1948

Teeth, transmission sprocket B29.1-1950, B29.2-1950
Telemetering equipment C37.2-1945
Telephone equipment on desks X2.1.2-1952
Television
- cameras and picture monitors C16.23-1954
- picture area, film PH22
- receivers, testing C16.13-1949
- signal levels, resolution, and timing of video switching systems C16.20-1951

Temperature limit controls, gas Z21.29-1941
Tents Z20.3-1950
Terminal markings, electrical apparatus C6.1-1944
Tetrasodium pyrophosphate K60.20-1949
Textiles
- acetate and rayon fabrics L22
- asbestos L14
- clothing
  - protective occupational (safety) L18
  - women's industrial L17
- colorfastness L14, L22
- cotton L14
- definitions L14.12-1954
- felt L14.52-1953
- fire hose, cotton rubber-lined L3.1-1941
- flammability of clothing L14.69-1952
- glass fabrics L14
- jute L14
- knit goods L14
- machines, testing L14.66-1954

Textiles *(Continued)*
men's wearing-apparel fabrics L22
pillowcases, cotton L4.1-1948
rayon L14, L22
rope L14.45-1949
safety code L1.1-1947
sheets, cotton L4.1-1948
shrinkage, woven cotton cloth L10-1936
test methods L14, L22
tolerances L14
toweling and bathmat fabrics L22
tubular sleeving and braids L13.1-1942
upholstery filling materials L12
water resistance L14
women's wearing-apparel fabrics L22
wool L14
yarns L14
Thermodynamics and heat, letter symbols ..Z10.4-1943 (*see* Y10)
Thermometers Z71.1-1954
Tile
drain A6.1-1954
structural A74.1-1953, A76.1-1953, A77.1-1953, A83.1-1953, A101.1-1954, A104.1-1954, A105.1-1954
Timber
piles, round O6-1939
small clear specimens O4a-1927
static tests O4b-1927
Time-series charts ..... Z15.2-1938 (*see* Y15)
Tolerances B4.1-1947
Toluene
allowable concentration Z37.12-1948
insoluble matter in rosin K21.1-1953
test for, by ultraviolet spectrophotometry Z11.70-1951
Tools, machine
adapters, adjustable B5.11-1954
arbors B5.18-1953
blades, straight cut-off B5.21-1949
chucks and chuck jaws B5.8-1954
circular and dovetail forming blanks B5.7-1954
drill drivers B5.27-1951
electrical standards C74-1942
engine lathes B5.16-1952
grinding machines B5.32-1953, B5.33-1953
jig bushings B5.6-1941
knurling B5.30-1953
lathes B5.9-1948
machine pins B5.20-1954
machine tapers B5.10-1953
markings for grinding wheels and other bonded abrasives B5.17-1949
milling
cutters B5c1-1947, B5.3-1950
machines B5.18-1953
pumps, lubricating and coolant, mounting dimensions B5.28-1952
punch and die sets B5.25-1950
reamers B5.14-1949
rotating air cylinders and adapters B5.5-1954
serrations, involute B5.26-1950
single point B5.19-1946, B5.22-1950
spindle noses B5.9-1954, B5.11-1954, B5.18-1953
splines, involute B5.15-1950, B5.31-1953
T-slots, bolts, nuts, tongues, cutters B5.1-1949
taps, cut and ground threads B5.4-1948
twist drills B5.12-1950
Toxic dusts and gases, allowable concentrations
benzene Z37.4-1941
carbon disulfide Z37.3-1941
carbon monoxide Z37.1-1941
chromic acid and chromates Z37.7-1943
formaldehyde Z37.16-1944
hydrogen sulfide Z37.2-1941
lead and certain of its inorganic compounds Z37.11-1943
manganese Z37.6-1948
mercury Z37-8-1943
methanol Z37.14-1944
methyl chloride Z37.18-1949
nitrogen oxides Z37.13-1944
toluene Z37.12-1943
trichloroethylene Z37.19-1946
xylene Z37.10-1948
Traffic
automobile, inspection requirements D7.1-1941
control devices D6.1-1948
control signal heads, adjustable face D10.1-1951
glass, safety, motor vehicles Z26.1-1950
grade crossing protection D8.1-1951
signal controllers D11.1-1943, D13.1-1950
street and highway lighting D12.1-1953
Transformers, regulators, and reactors C57
Trichloroethylene, allowable concentration Z37.19-1946
Trisodium phosphate K60.12-1949
Trucks—*see* Automobiles
Tubes and tubing (*see also* Pipe and piping)
boiler
electric-resistance-welded B36.13-1945, B36.18-1945
lap-welded B36.12-1945
medium-carbon seamless steel B36.15-1945
seamless alloy-steel B36.17-1945
seamless steel B36.14-1945
copper A40.2-1936, H23.1-1954
Turpentine K32.1-1953, K33-1937
Twist drills B5.12-1950

— U —

Upholstery
filling materials, definitions
cotton L12.1-1946
miscellaneous L12.4-1946
wool L12.2-1946
Utensils, cooking Z61.1-1949

— V —

Vacuum tubes C60
Valve connections, compressed gas cylinder B57.1-1953
Valves B16.10-1939, B60.1-1950
Ventilation
building code requirements A53.1-1946
symbols, graphical ..... Z32.2.4-1949 (*see* Y32)
tanks, open-surface Z9.1-1951
Viscosity, specific, test for A37.63-1948
(*see also* Petroleum products and lubricants, tests)
Voltage
measurement, dielectric tests C68.1-1953
preferred C67.1-1951, C84.1-1954

— W —

Washers
lock B27.1-1950
plain B27.2-1953
Water, quality used in concrete A37.62-1948
Wave guides, definitions C16.21-1954

Welding
electric and gas, safety Z49.1-1950
resistance C52.3-1945, C52.4-1945, C52.5-1945
symbols, graphical ..... Z32.2.1-1949 (*see* Y32)
Wet tests, electrical C77.1-1943
Window cleaning, safety code A39-1933
Wire (including cable)
bare electrical conductors C7
bars
electrolytic copper H17.2-1942
lake copper H17.1-1942
brass H32.1-1953
concrete reinforcement A50.3-1936
flexible cord and fixture C33.1-1954
general purpose H30.1-1954
insulated C8, C9
ropes for mines M11-1927
zinc-coated (galvanized) steel
barbed G8.10-1948
fencing G8.9-1948
strand G8.6-1943, G8.11-1944
telephone and telegraph line G8.3-1944
tie G8.4-1935
Wiring, electric (National Electrical Code) C1-1953
Wood—*see* Timber
Wood poles—*see* Poles, wood
Woodruff keys B17f-1930
Woodworking machinery, safety code O1.1-1954
Work injury experience, recording and measuring Z16.1-1954
Wrought-iron sheets G8.8-1937, G23-1939

— X —

X-rays, industrial use, safety code Z54.1-1946
Xylene, allowable concentration Z37.10-1948

— Z —

Zinc
coating
barbed wire G8.10-1948
chain-link fence fabric G8.5-1945
conduit C80
pipe, steel B36.20-1951
sheets G8.2-1951, G8.8-1937
steel shapes, plates, bars G8.1-1947
telephone and telegraph line wire G8.3-1944
tie wire, iron and steel G8.4-1935
wire fencing G8.9-1948
wire strand G8.6-1943, G8.11-1944
rolled H25.1-1943
slab (spelter) H24.1-1949

American Standards

For abbreviations and explanation of reference markers see page 1

A — Civil Engineering and Construction

(Special price of series, $57.00)

		Price
A1.1-1954	★Portland Cement, Specifications for (ASTM C150-53)	.30
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A1.6-1950	Chemical Analysis of Portland Cement, Methods of (ASTM C114-51T)	
A1.7-1954	★Fineness of Portland Cement by the Turbidimeter, Method of Test for (ASTM C115-53; AASHO T98-53)	.30
A1.8-1954	★Autoclave Expansion of Portland Cement, Method of Test for (ASTM C151-53)	.30
A1.9-1954	★Air Content of Portland Cement Mortar, Method of Test for (ASTM C185-53T)	.30
A1.10-1954	★Heat of Hydration of Portland Cement, Method of Test for (ASTM C186-53)	.30
A1.11-1950	Normal Consistency of Hydraulic Cement, Method of Test for (ASTM C187-49)	.30
A1.12-1948 R1950	Specific Gravity of Hydraulic Cement, Method of Test for (ASTM C188-44)	.30
A1.13-1950	Soundness of Hydraulic Cement Over Boiling Water (Pat Test), Method of Test for (ASTM C189-49)	.30
A1.14-1950	Tensile Strength of Hydraulic Cement Mortars, Method of Test for (ASTM C190-49)	.30
A1.15-1954	★Time of Setting of Hydraulic Cement by the Vicat or Gillmore Needles, Methods of Test for (ASTM C191-52)	.30
A1.16-1954	★Air-Entraining Portland Cement, Specifications for (ASTM C175-53)	.30
A1.17-1954	★Time of Setting of Hydraulic Cement by Gillmore Needles, Method of Test for (ASTM C266-51T)	.30
A2.1-1942	Fire Tests of Building Construction and Materials, Methods of (ASTM E119-41)	*Under revision*
A2.2-1942	Fire Tests of Door Assemblies, Methods of (ASTM E152-41)	.30
A6.1-1954	Drain Tile, Specifications for (ASTM C4-50T)	.30
A9.1-1953	Building Exits Code (NFPA 101; AIA 40-B-7)	1.00
A10.1-1951	Manual of Accident Prevention in Construction	3.00
A10.2-1944	†Building Construction, Safety Code for	1.75
A11.1-1952	Industrial Lighting	.50
A12-1932	†Floor and Wall Openings, Railings, and Toe Boards, Safety Code for	.50
A13-1928 R1947	Identification of Piping Systems, Scheme for the	.60
A14.1-1952	†Portable Wood Ladders, Safety Code for	.75
A17.1-1937	Elevators, Dumbwaiters, and Escalators, Safety Code for, with Supplement A17.3-1942	1.50
A17.1.5-1953	Private Residence Elevators, Safety Code for	1.00
A17.2-1945	Elevators, Inspection of (Inspectors' Manual)	1.50
A19-1937	Void in Aggregates for Concrete, Method of Test for (ASTM C30-37; AASHO T20-42)	.30

●A21 — Cast Iron Pipe and Fittings:

A21.1-1939	Computation of Strength and Thickness of Cast-Iron Pipe, Manual for the (AWWA C101)	.65
A21.2-1953	Cast-Iron Pit Cast Pipe for Water or Other Liquids, Specifications for (AWWA C102)	.45
A21.3-1953	Cast Iron Pit Cast Pipe for Gas, Specifications for	.25
A21.4-1953	Cement Mortar Lining for Cast-Iron Pipe and Fittings, Specifications for (AWWA C104)	.35
A21.6-1953	Cast Iron Pipe Centrifugally Cast in Metal Molds for Water or Other Liquids, Specifications for (AWWA C106)	.40
A21.7-1953	Cast Iron Pipe Centrifugally Cast in Metal Molds for Gas, Specifications for	.25
A21.8-1953	Cast Iron Pipe Centrifugally Cast in Sand-Lined Molds, for Water or Other Liquids, Specifications for (AWWA C108)	.45
A21.9-1953	Cast Iron Pipe Centrifugally Cast in Sand-Lined Molds for Gas, Specifications for	.25
A21.10-1952	Short-Body, Cast-Iron Fittings, 3 Inch to 12 Inch, for 250-Psi, Water Pressure Plus Water Hammer, Specifications for (AWWA C110)	.35
A21.11-1953	Mechanical Joint for Cast Iron Pressure Pipe and Fittings, Specifications for (AWWA C111)	.35

●

A23.1-1948	School Lighting (AIA 31-F-28)	.50
A35.1-1941 R1947	Manhole Frames and Covers for Subsurface Structures	.50

●A37 — Road and Paving Materials:

A37.1-1954	Penetration of Bituminous Materials, Method of Test for (ASTM D5-52; AASHO T49-52)	.30
A37.2-1951	Float Test for Bituminous Materials, Method of (ASTM D139-49; AASHO T50-49)	.30
A37.3-1954	Determination of Bitumen, Method of Test for (ASTM D4-52)	.30
A37.4-1951	Amount of Material Finer than No. 200 Sieve in Aggregates, Method of Test for (ASTM C117-49; AASHO T11-49)	.30
A37.5-1943 R1948	Specific Gravity and Absorption of Coarse Aggregate, Method of Test for (ASTM C127-42)	.30
A37.6-1943 R1948	Specific Gravity and Absorption of Fine Aggregate, Method of Test for (ASTM C128-42; AASHO T84-45)	.30

		Price
A37.7-1954	Abrasion of Coarse Aggregate by Use of the Los Angeles Machine, Method of Test for (ASTM C131-51; AASHO T96-51)	.30
A37.8-1947 R1948	Sieve Analysis of Fine and Coarse Aggregates, Method of Test for (ASTM C136-46; AASHO T27-46)	.30
A37.9-1954	Distillation of Tar Products Suitable for Road Treatment, Method of Test for (ASTM D20-52; AASHO T52-52)	.30
A37.10-1943 R1948	Softening Point of Bituminous Materials (Ring-and-Ball Method), Method of Test for (ASTM D36-26; AASHO T53-42)	.30
A37.11-1945 R1948	Ductibility of Bituminous Materials, Method of Test for (ASTM D113-44; AASHO T51-44)	.30
A37.12-1943 R1948	Proportion of Bitumen Soluble in Carbon Tetrachloride, Method of Test for (ASTM D165-42)	.30
A37.13-1943 R1948	Residue of Specified Penetration, Method of Test for (ASTM D243-36; AASHO T56-42)	.30
A37.14-1943 R1948	Sieve Analysis of Mineral Filler, Method of Test for (ASTM D546-41; AASHO T37-42)	.30
A37.15-1948	Paving Brick, Specifications for (ASTM C7-42; AASHO M40-42 and T31-42)	.30
A37.16-1948	Unit Weight of Aggregate, Method of Test for (ASTM C29-42; AASHO T19-45)	.30
A37.17-1951	Making and Curing Concrete Compression and Flexure Test Specimens in the Field, Method of (ASTM C31-49; AASHO T23-49)	.30
A37.18-1951	Compressive Strength of Molded Concrete Cylinders, Method of Test for (ASTM C39-49, AASHO T22-49)	.30
A37.19-1951	Organic Impurities in Sands for Concrete, Method of Test for (ASTM C40-48)	.30
A37.20-1951	Securing, Preparing, and Testing Specimens from Hardened Concrete for Compressive and Flexural Strengths, Methods of (ASTM C42-49; AASHO T24-49)	.30
A37.21-1948	Surface Moisture in Fine Aggregate, Method of Test for (ASTM C70-47)	.30
A37.22-1951	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading), Method of Test for (ASTM C78-49; AASHO T97-49)	.30
A37.23-1948	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate, Method of Test for (ASTM C88-46T; AASHO T104-46)	.30
A37.24-1951	Compressive Strength of Concrete Using Portions of Beams Broken in Flexure (Modified Cube Method), Method of Test for (ASTM C116-49; AASHO T140-49)	.30
A37.25-1948	Coal and Lignite in Sand, Method of Test for (ASTM C123-44; AASHO T113-45)	.30
A37.26-1948	Flow of Portland-Cement Concrete by Use of the Flow Table, Method of Test for (ASTM C124-39; AASHO T120-42)	.30
A37.27-1948	Weight per Cubic Foot, Yield, and Air Content (Gravimetric) of Concrete, Method of Test for (ASTM C138-44; AASHO T121-45)	.30
A37.28-1948	Clay Lumps in Aggregates, Method of Test for (ASTM C142-39; AASHO T112-42)	.30
A37.29-1954	Slump Test for Consistency of Portland-Cement Concrete, Method of (ASTM C143-52; AASHO T119-52)	.30
A37.30-1954	Sampling of Fresh Concrete, Method of (ASTM C172-52T)	.30
A37.31-1951	Measuring Length of Drilled Concrete Cores, Method of (ASTM C174-49; AASHO T148-49)	.30
A37.32-1948	Loss on Heating of Oil and Asphaltic Compounds, Method of Test for (ASTM D6-39T; AASHO T47-42)	.30
A37.33-1954	Terms Relating to Materials for Roads and Pavements, Definitions of (ASTM D8-52)	.30
A37.34-1948	Materials for Sand-Cement Bed for Brick and Block Pavements, Specifications for (ASTM D58-37)	.30
A37.35-1954	Granite Block for Pavements, Specifications for (ASTM D59-53)	.30
A37.36-1948	Softening Point of Tar Products (Cube-in-Water Method), Method of Test for (ASTM D61-38)	.30
A37.37-1951	Calcium Chloride, Specifications for (ASTM D98-48; AASHO M144-49)	.30
A37.38-1948	Coal-Tar Pitch for Stone Block Filler, Specifications for (ASTM D112-30)	.30
A37.39-1948	Recut Granite Block for Pavements, Specifications for (ASTM D131-39)	.30
A37.40-1948	Granite Block for Durax Pavements, Specifications for (ASTM D132-39)	.30
A37.41-1948	Mineral Filler for Sheet Asphalt and Bituminous Concrete Pavements, Specifications for (ASTM D242-39; AASHO M17-42)	.30
A37.42-1951	Testing Emulsified Asphalts, Methods of (ASTM D244-49; AASHO T59-49)	.30
A37.43-1951	Bituminous Paving Plant Inspection (ASTM D290-51)	.30
A37.44-1951	Sampling and Testing Calcium Chloride, Methods of (ASTM D345-48; AASHO T143-49)	.30
A37.45-1951	Distillation of Cut-back Asphaltic Products, Method of Test for (ASTM D402-49)	.30
A37.46-1948	Centrifuge Moisture Equivalent of Soils, Method of Test for (ASTM D425-39; AASHO T94-42)	.30
A37.47-1948	Field Moisture Equivalent of Soils, Method of Test for (ASTM D426-39; AASHO T93-42)	.30
A37.48-1951	Asphalt Plank, Specifications for (ASTM D517-50)	.30
A37.49-1948	Preformed Expansion Joint Fillers for Concrete (Non-extruding and Resilient Types), Specifications for (ASTM D544-41; AASHO M58-42)	*Under revision*
A37.50-1948	Moisture-Density Relations of Soil-Cement Mixtures, Method of Test for (ASTM D558-44; AASHO T134-45)	.30
A37.51-1948	Wetting-and-Drying Test of Compacted Soil-Cement Mixtures, Method of (ASTM D559-44; AASHO T135-45)	.30
A37.52-1948	Freezing-and-Thawing Test of Compacted Soil-Cement Mixtures, Method of (ASTM D560-44; AASHO T136-45)	.30
A37.53-1948	Cut-back Asphalt (Rapid Curing Type), Specifications for (ASTM D597-46; AASHO M81-42)	.30
A37.54-1948	Cut-back Asphalt (Medium Curing Type), Specifications for (ASTM D598-46; AASHO M82-42)	.30
A37.55-1951	Slow-Setting Emulsified Asphalt (for Fine Aggregate Mixes), Specifications for (ASTM D631-49)	.30

		Price
A37.56-1948	Sodium Chloride, Specifications for (ASTM D632-43)	.30
A37.57-1948	Volume Correction Table for Tar and Coal-Tar Pitch (ASTM D633-44)	.30
A37.58-1948	Cement Content of Soil-Cement Mixtures, Method of Test for (ASTM D806-47)	.30
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		Price
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B36.22-1950	Seamless Carbon-Molybdenum Alloy-Steel Pipe for High-Temperature Service, Specifications for (ASTM A206-48T)	*Under revision*
B36.23-1950	Welded Alloyed Open-Hearth Iron Pipe, Specifications for (ASTM A253-47)	*Under revision*
B36.24-1950	Seamless Chromium-Molybdenum Alloy-Steel Pipe for Service at High Temperatures, Specifications for (ASTM A280-48T)	*Under revision*
B36.25-1950	Seamless 1 Percent Chromium, 0.5 Percent Molybdenum Alloy-Steel Pipe for Service at High Temperatures, Specifications for (ASTM A315-48T)	*Under revision*
B36.26-1950	Seamless and Welded Austenitic Stainless Steel Pipe, Specifications for (ASTM A312-48T)	*Under revision*
B38.1-1931	Domestic Refrigerators Using Ice, Code for Testing	*Under revision—Out of print*
B38.1-1944 R1949	†Food-Storage Volume and Shelf Area of Automatic Household Refrigerators, Method of Computing	.35
B38.2-1944	†Household Electric Refrigerators (Mechanically Operated), Test Procedures for	.50
B40.1-1939 R1953	Indicating Pressure and Vacuum Gages	.50
B45.1-1932	Foundry Patterns of Wood (CS19-32)	*Out of print*
B46.1-1955	★Surface Roughness, Waviness, and Lay	1.25
B47.1-1941	Gage Blanks (CS8-41)	*Under revision*
B48.1-1933 R1947	†Inch-Millimeter Conversion for Industrial Use	.50
B49.1-1947	Shaft Couplings, Integrally Forged Flange Type for Hydro-Electric Units	.50
B56.1-1950	Industrial Power Trucks, Safety Code for	.85
B57.1-1953	Compressed Gas Cylinder Valve Outlet and Inlet Connections (CGA V-1)	1.50
B59.1-1950	Mechanical Refrigeration Installations on Shipboard (ASRE 26)	1.00
B60.1-1950	Refrigerant Expansion Valves, Method of Rating and Testing (ASRE 17-R)	.50
B64.1-1954	★†One-Quart Round Motor Oil Cans, Specifications for	.35
B64.2-1954	★†Five-Quart and One-Gallon Round Cans, Requirements for	*In press*
B64.3-1954	★†Oblong Oil Cans, Requirements for	*In press*
B64.4-1954	★†Grease Cans, Requirements for	*In press*
B65.1-1954	★†Controls and Signaling Devices for Graphic Art Presses, Safety Code for	.50
B70.1-1954	★Refrigeration Flare-Type Fittings (SAE SP-95)	2.00

C — Electrical Engineering

(Special price of series, including abbreviation and symbol standards, $77.50)

C1-1953	National Electrical Code (NBFU 70; Pocket Edition) (Paper-bound NFPA 70; 4¾ x 7¼ in., 576 pages $1.00)	.10

●C2 — National Electrical Safety Code (NBS Handbook H30):

C2.1-1941 R1947	Installation and Maintenance of Electrical Supply Stations, Safety Rules for the (NBS Handbook H31) (Also sold separately 10¢)	1.75
C2.2-1941 R1947	Installation and Maintenance of Electric Supply and Communication Lines, Safety Rules for the (NBS Handbook H32) (Not sold separately)	
C2.3-1941 R1947	Installation and Maintenance of Electric Utilization Equipment, Safety Rules for the (NBS Handbook H33) (Not sold separately)	
C2.4-1939 R1947	Operation of Electric Equipment and Lines, Safety Rules for the (NBS Handbook H34) (Also sold separately 20¢)	
C2.5-1940 R1947	Radio Installations, Safety Rules for (NBS Handbook H35) (Also sold separately 15¢)	

●C5 — Protection against Lightning, Code for (NBS Handbook H46; NFPA 78):

C5.1-1953	Part I, Protection of Persons	.40
C5.2-1953	Part II, Protection of Buildings and Miscellaneous Property	
C5.3-1953	Part III, Protection of Structures Containing Flammable Liquids and Gases	
C6.1-1944	Terminal Markings for Electrical Apparatus	1.00

●C7 — Bare Wire:

C7.1-1953 2nd ed.	Soft or Annealed Copper Wire, Specifications for (ASTM B3-53T)	*Under revision*
C7.2-1953 2nd ed.	Hard-Drawn Copper Wire, Specifications for (ASTM B1-53T)	.30
C7.3-1953	Medium-Hard-Drawn Copper Wire, Specifications for (ASTM B2-52)	.30
C7.4-1953 2nd ed.	Tinned Soft or Annealed Copper Wire for Electrical Purposes, Specification for (ASTM B33-53T)	.30

		Price
C7.5-1953 2nd ed.	Bronze Trolley Wire, Specifications for (ASTM B9-53)	.30
C7.6-1953	Copper Trolley Wire, Specifications for (ASTM B47-52)	.30
C7.7-1953	Hot-Rolled Copper Rods for Electrical Purposes, Specifications for (ASTM B49-52)	.30
C7.8-1953 2nd ed.	Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft, Specifications for (ASTM B8-53)	.30
C7.9-1953	Soft Rectangular and Square Bare Copper Wire for Electrical Conductors, Specifications for (ASTM B48-52)	.30
C7.10-1953 2nd ed.	Hard-Drawn Copper Alloy Wires for Electrical Conductors, Specifications for (ASTM B105-53)	.30
C7.11-1953	Figure-9 Deep-Section Grooved and Figure-8 Copper Trolley Wire for Industrial Haulage, Specifications for (ASTM B116-52)	.30
C7.12-1953 2nd ed.	Rope-Lay Stranded Copper Conductors Having Bunch-Stranded Members, for Electrical Conductors, Specifications for (ASTM B172-53T)	.30
C7.13-1953 2nd ed.	Rope-Lay Stranded Copper Conductors Having Concentric-Stranded Members, for Electrical Conductors, Specifications for (ASTM B173-53T)	.30
C7.14-1953 2nd ed.	Bunch-Stranded Copper Conductors for Electrical Conductors, Specifications for (ASTM B174-53T)	.30
C7.15-1953 2nd ed.	Lead-Coated and Lead-Alloy-Coated Soft Copper Wire for Electrical Purposes, Specification for (ASTM B189-53T)	.30
C7.16-1953	Cored, Annular, Concentric-Lay-Stranded Copper Conductors, Specifications for (ASTM B226-52)	.30
C7.17-1953	Hard-Drawn Copper Covered Steel Wire, Specifications for (ASTM B227-52)	.30
C7.18-1953	Concentric-Lay-Stranded Copper Covered Steel Conductors, Specifications for (ASTM B228-52)	.30
C7.19-1953	Concentric-Lay-Stranded Copper and Copper Covered Steel Composite Conductors, Specifications for (ASTM B229-52)	.30
C7.20-1953 2nd ed.	Hard-Drawn Aluminum Wire for Electrical Purposes, Specifications for (ASTM B230-53T)	.30
C7.21-1953 2nd ed.	Concentric-Lay-Stranded Aluminum Conductors, Hard-Drawn, Specifications for (ASTM B231-53)	*Under revision*
C7.22-1953 2nd ed.	Concentric-Lay-Stranded Aluminum Conductors, Steel-Reinforced (ACSR), Specifications for (ASTM B232-53T)	.30
C7.23-1953	Rolled Aluminum Rods (EC Grade) for Electrical Purposes, Specifications for (ASTM B233-52)	.30
C7.24-1951	Resistivity of Electrical Conductor Materials, Method of Test for (ASTM B193-49)	.30
C7.25-1953	Copper Bus Bar, Rod, and Shapes, Specifications for (ASTM B187-52)	.30
C7.26-1953	Seamless Copper Bus Pipe and Tube, Specifications for (ASTM B188-52)	.30
C7.27-1953	Aluminum Bars for Electrical Purposes (Bus Bars), Specifications for (ASTM B236-52T)	.30
C7.28-1953	Standard Weight Zinc-Coated (Galvanized) Steel Core Wire for Aluminum Conductors, Steel Reinforced, Specifications for (ASTM B245-52T)	.30
C7.29-1953	Determination of Cross-Sectional Area of Stranded Conductors, Method of (ASTM B263-53T)	.30

●C8 — Insulated Wire:

		Price
C8.1-1944 R1953	Definitions and General Standards for Wire and Cables (AIEE 30-1944)	.40
C8.9-1942 R1953	†Slow-Burning Wire and Cable, Specifications for	.35
C8.12-1942	†Cotton Braid for Insulated Wire and Cable for General Purposes, Specifications for	*Under revision—Out of print*
C8.13-1948	Varnished Cambric Insulated Cables, Specification for (IPCEA S-2-1946)	*Under revision*
C8.15-1942	†Metallic Coverings for Insulated Wire and Cable, Specifications for	*Under revision—Out of print*
C8.16-1953	†Rubber-Insulated Tree Wire, Specifications for	.50
C8.17-1954	AO 30% Hevea Rubber Compound for Insulated Wire and Cable (ASTM D 27-52T)	.60
C8.18-1948	†Weather-Resistant (Weatherproof) Wire and Cable (URC Type), Specifications for	.60
C8.19-1939 R1953	†Weather-Resistant Saturants and Finishes for Aerial Rubber Insulated Wire and Cable, Specifications for	.40
C8.22-1954	Rubber Insulated Wire and Cable, Methods of Testing (ASTM D470-52T)	.60
C8.23-1954	Performance Synthetic Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D755-52T)	.50
C8.24-1954	Heat-Resisting Synthetic Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D754-52T)	.50
C8.25-1954	Rubber Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D532-49)	.50
C8.26-1954	Performance Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D353-52T)	.50
C8.27-1954	Heat-Resisting Rubber Compound for Insulated Wire and Cable, Specifications for (ASTM D469-52T)	.50
C8.28-1954	GR-S Synthetic Rubber Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D866-46T)	.50
C8.29-1954	Ozone-Resistant Type Insulation for Insulated Wire and Cable, Specifications for (ASTM D574-46T)	.50
C8.30-1954	★Insulated Wire and Cable: Polyvinyl Insulating Compound, Specifications for (ASTM D734-50T)	.50
C8.31-1954	Sheath Compound for Electrical Insulated Cords and Cables Where Extreme Abrasion Resistance Is Not Required, Specifications for (ASTM D753-49)	.50
C8.32-1954	GR-M Polychloroprene Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D752-49T)	.50
C8.33-1954	Thermoplastic Vinyl Polymer Sheath Compound for Electrical Insulated Cords and Cables, Specifications for (ASTM D1047-49T)	.50
C8.34-1954	†Weather-Resistant Wire and Cable, Neoprene Type, Specifications for	.50

●C9 — Magnet Wire:

		Price
C9.1-1953	†Enamel-Coated Round Copper Magnet Wire (NEMA MW1-1953)	.50
C9.2-1953	†Cotton-Covered Round Copper Magnet Wire (NEMA MW11-1953)	.35
C9.3-1953	†Silk-Covered Round Copper Magnet Wire (NEMA MW21-1953)	.35
C9.4-1953	†Nylon-Fibre-Covered Round Copper Magnet Wire (NEMA MW22-1953)	.35
C12-1941	Electricity Meters, Code for, including Supplement C12a-1947 (C12a-1947 sold separately....25¢)	2.00
C13-1926	Tubular Steel Poles for Electric Line Construction, Specifications for *Out of print*	

●C16 — Radio:

C16.4-1942	†Loudspeaker Testing	.50
C16.5-1954	★†Volume Measurements of Electrical Speech and Program Waves	.50
C16.9-1943	†Power and Audio Transformers and Reactors (Home Receiver Replacement Type) (American War Standard) *Withdrawn*	
C16.11-1949	†Antennas, Methods of Testing (48 IRE 2.S2)	.75
C16.12-1949	†Frequency-Modulation Broadcast Receivers, Methods of Testing (47 IRE 17.S1), with Supplement, C16.12a-1951, Effects of Mistuning and Downward Modulation, Methods of Testing for (49 IRE 17.S1)	1.25
C16.13-1949	†Television Receivers (Monochrome Service, 6-Megacycle Channel), Methods of Testing (48 IRE 22.S1)	1.00
C16.14-1949	Replaced by C83.1-1949	
C16.15-1949	Replaced by C83.2-1949	
C16.16-1949	†Vibrating Interrupters and Rectifiers for Auto Radios (Frequency 115 Cycles) (RMA REC-113)	.35
C16.17-1951	Replaced by C83.3-1951	
C16.18-1951	†Vehicular Communications Receivers, Methods of Testing (49 IRE 16.S1)	.50
C16.19-1951	†Amplitude-Modulation Broadcast Receivers, Methods of Testing (48 IRE 17.S1)	1.00
C16.20-1951	†Television Signal Levels, Resolution, and Timing of Video Switching Systems, Methods of Measurement of (50 IRE 23.S1)	.75
C16.21-1954	★Definitions of Terms on Antennas and Wave Guides	.75
C16.23-1954	★Measurement of Aspect Ratio and Geometric Distortion of Television Cameras and Picture Monitors, Methods of (54 IRE 23.51) *In press*	
C18.1-1954	Dry Cells and Batteries, Specifications for (NBS Circular C466) *In press*	
C19.1-1943	Industrial Control Apparatus (AIEE 15-1944) *Under revision—Out of print*	
C29.1-1944	†Insulator Tests (AIEE 41-1944)	.80
C33.1-1954	Flexible Cord and Fixture Wire	.75
C34.1-1949	Pool Cathode Mercury-Arc Power Converters	1.20
C35.1-1943	Rotating Electrical Machinery on Railway Locomotives and Rail Cars and Trolley, Gasoline-Electric and Oil-Electric Coaches (AIEE 11-1943) *Under revision—Out of print*	

●C37 — Circuit Breakers:

(Special Price of Series, $5.00)

		Price
C37.1-1950	†Relays Associated with Electric Power Apparatus	.60
C37.2-1945	†Automatic Station Control, Supervisory, and Telemetering Equipments	.60
C37.4-1953	†Alternating-Current Power Circuit Breakers (Also sold separately.....60¢)	3.25
C37.4a-1954 (C57.12b-1954)	★†Apparatus Bushings (Used with Power Circuit Breakers and Outdoor Transformers), Electrical and Mechanical Characteristics of (Also sold separately 25¢)	
C37.5-1953	†Rms Value of a Sinusoidal Current Wave and a Normal-Frequency Recovery Voltage, Methods for Determining the (Also sold separately.....60¢)	
C37.6-1955	★†Preferred Ratings for Power Circuit Breakers, Schedules of (Also sold separately 40¢)	
C37.7-1952	†Interrupting Rating Factors for Reclosing Service Power Circuit Breakers (Also sold separately.....30¢)	
C37.8-1952	†Rated Control Voltages and Their Ranges, for Power Circuit Breakers (Also sold separately.....30¢)	
C37.9-1953	†Test Code for Power Circuit Breakers (Also sold separately.....60¢)	
C37.12-1952	†Guide Specifications for Alternating-Current Power Circuit Breakers (Also sold separately.....60¢)	
C37.13-1954	★†Low Voltage Air Circuit Breakers (Including Application Guide) (Also sold separately.....80¢)	1.60
C37.14-1954	★†Low Voltage Air Circuit Breakers (Also sold separately.....50¢)	
C37.15-1954	★†Rated Control Voltages and Their Ranges for Low Voltage Air Circuit Breakers (Also sold separately.....30¢)	
C37.20-1955	Switchgear Assemblies and Metal-Enclosed Bus (AIEE 27)	.80
C39.1-1951	†Electrical Indicating Instruments	1.60
C39.2-1953	†Direct-Acting Electrical Recording Instruments (Switchboard and Portable Types)	.75
C39.3-1948	†Shock-Testing Mechanism for Electrical Indicating Instruments, Specifications for	.50
C40-1928	Storage Batteries (AIEE 36-1928) *Under revision—Out of print*	
C42-1941	Definitions of Electrical Terms *Under revision—Out of print*	
C48-1931	Electric Railway Control Apparatus, Standards for (AIEE 16-1933)	.60
C50-1943	†Rotating Electrical Machinery *Under revision*	
C50.20-1954	★†Polyphase Induction Motors and Generators, Test Code for	.80
C52.3-1945	†Straight and Offset Resistance-Welding Electrodes and Electrode Holders (American War Standard)	.50
C52.4-1945	†Controls for Resistance-Welding Machines (American War Standard)	.35
C52.5-1945	†Specifications for Resistance-Welding Machines (American War Standard)	.75
C55.1-1951	Capacitors, Standards for (AIEE 18-1951)	.40

●C57 — Transformers, Regulators, and Reactors:

		Price
C57.10-1953	†Transformers, Regulators, and Reactors, Terminology for (Revision sheet, gratis)	
C57.11-1953	†Transformers, Regulators, and Reactors, General Requirements for (Revision sheet, gratis)	
C57.12-1949	†Distribution, Power, and Regulating Transformers, and Reactors other than Current-Limiting Reactors	
C57.12a-1954	†Transformers — 67,000 Volts and below; 501 through 10,000 Kva, 3 Phase; 501 through 5,000 Kva, 1 Phase, Requirements for (Also sold separately....$1.00)	
C57.12b-1954 (C37.4a-1954)	★†Apparatus Bushings (Used with Power Circuit Breakers and Outdoor Transformers), Electrical and Mechanical Characteristics of (Also sold separately 25¢)	
C57.13-1954	†Instrument Transformers, Requirements for (Also sold separately.....$2.50)	
C57.14-1948	†Constant-Current Transformers of the Moving-Coil Type	
C57.15-1949	†Step-Voltage and Induction-Voltage Regulators (Also sold separately.....50¢)	
C57.16-1948	†Current-Limiting Reactors	
C57.17-1948	†General-Purpose Specialty Transformers..	$7.50
C57.18-1948	†Rectifier Transformer Equipment	
C57.22-1948	†Distribution, Power, and Regulating Transformers, Test Code for	
C57.23-1948	†Instrument Transformers, Test Code for.. (Withdrawn; incorporated into C57.13-1954)	
C57.25-1949	†Step-Voltage and Induction-Voltage Regulators, Test Code for (Also sold separately.....50¢)	
C57.28-1948	†Rectifier Transformer Equipment, Test Code for	
*C57.31-1938	†Operation of Transformers, Regulators, and Reactors at Altitudes Greater than 3300 Feet (1000 Meters), Guide for	
*C57.32-1948	†Loading Oil-Immersed Distribution and Power Transformers, Guide for (Also sold separately.....50¢)	
*C57.33-1953	†Loading and Operation of Instrument Transformers, Guide for (Also sold separately.....35¢)	
*C57.34-1948	†Loading Pole-Type Constant-Current Transformers, Guide for	
*C57.35-1948	†Loading Step-Voltage and Induction-Voltage Regulators, Guide for	
*C57.36-1948	†Loading Current-Limiting Reactors, Guide for	
C57.19	Distribution Transformers, Conventional Subway Type (EEI 51-3; NEMA 113-1951) (Proposed; distributed for trial and study)	.60
C57.20	Distribution Transformers, Overhead Type (EEI 53-1; NEMA 114-1953) (Proposed; distributed for trial and study)	1.00

●C59 — Electrical Insulation Materials:

		Price
C59.1-1954	Testing Molded Materials Used for Electrical Insulation, Methods of (ASTM D48-52T)	.30
C59.2-1944	Testing Electrical Insulating Oils, Method of (ASTM D117-43)	*Under revision*
C59.3-1954	Insulation Resistance of Electrical Insulating Materials, Methods of Test for (ASTM D257-52T)	*Under revision*
C59.4-1935 R1945	Rubber Matting for Use Around Electrical Apparatus (Voltage Rating of Matting, 3000 Volts), Specifications for (ASTM D178-24)	.30
C59.6-1952	Rubber Insulating Tape, Specifications for (ASTM D119-48T)	.30
C59.10-1941 R1954	Testing Molding Powders Used in Manufacturing Molded Electrical Insulators, Methods of (ASTM D392-38)	.30
C59.11-1948 R1954	Impact Resistance of Plastics and Electrical Insulating Materials, Methods of Test for (ASTM D256-47T)	.30
C59.13-1951	Testing Sheet and Plate Materials Used in Electrical Insulation, Methods of (ASTM D229-49)	.30
C59.14-1954	Testing Laminated Tubes Used in Electrical Insulation, Methods of (ASTM D348-52)	.30
C59.15-1954	Testing Laminated Round Rods Used in Electrical Insulation, Methods of (ASTM D349-52)	.30
C59.16-1952	Laminated Thermosetting Products (NEMA LP1-1951)	1.00
C59.17-1949	Fabricating Laminated Plastics, Practice for (NEMA 45-107)	.25
C59.18-1954	Testing Shellac Used for Electrical Insulation, Methods of (ASTM D411-53)	.30
C59.19-1952	Dielectric Strength of Insulating Oils of Petroleum Origin, Method of Test for (ASTM D877-49)	.30
C59.20-1952	Vulcanized Fibre (NEMA Vul-1949)	*Under revision*
C59.21-1951	Sampling Electrical Insulating Oils, Method for (ASTM D923-49)	.30
C59.22-1951	Power Factor and Dielectric Constant of Electrical Insulating Oils of Petroleum Origin, Method of Test for (ASTM D924-49)	.30
C59.23-1951	Gas Content of Insulating Oils, Methods of Test for (ASTM D831-48)	.30
C59.24-1951	Inorganic Chlorides and Sulfates in Insulating Oils, Method of Test for (ASTM D878-49)	.30
C59.25-1951	Detection of Free Sulphur in Electrical Insulating Oils, Method of Test for (ASTM D989-48T)	*Under revision*
C59.26-1954	Natural Block Mica and Mica Films Suitable for Use in Fixed Mica-Dielectric Capacitors, Specifications for (ASTM D748-52T)	.30

●C60 — Electron Tubes:

		Price
C60.1-1952	†Electron Tube Bases, Caps, and Terminals (RTMA ET-103-B; NEMA 500-B)	1.50
C60.2-1953	†Electron Tubes, Dimensional Characteristics of (RTMA ET-105-A; NEMA 502-A)	.80
C60.4-1950	†Designation System for Metal Electron Tube Shells (RTMA ET-112; NEMA 508)	.35
C60.5-1952	Electron Tubes, Methods of Testing (50 IRE 7.S2)	1.25
C60.6-1952	Direct Interelectrode Capacitance, Measurement of (RTMA ET-109-A; NEMA 505-A)	.80

*Withdrawn; in accordance with ASA C57 Committee action, officially approved by ASA on August 20, 1953, the words "American Standard" were removed from the titles of the guides. They now have the status of an appendix to the C57 standards as a source of engineering information.

		Price
C60.7-1952	Gages for Electron Tube Bases (RTMA ET-106-A; NEMA 503-A)	.80
C60.8-1952	Interelement Capacitances, Rating Values of (RTMA ET-114; NEMA 510)	.15
C60.11-1954	★Gas Filled Radiation Counter Tubes, Methods of Testing (52 IRE 7.S2) *In press*	
C60.13-1954	★Noise in Electron Devices, Methods of Measuring (53 IRE 7.S1) *In press*	
C62.1-1944	Lightning Arresters for Alternating-Current Power Circuits (AIEE 28-1944) *Under revision—Out of print*	
C63.1-1946	†Radio Interference of Electrical Components and Completed Assemblies of Electrical Equipment for the Armed Forces from 150 Kilocycles to 20 Megacycles, Method of Measuring (American War Standard) (JAN-I-225) *Gratis*	
C63.2	Radio Noise Meter, 0.015 to 25 Megacycles/Second, Specifications for (RMA 32-A; NEMA 102-1950) (Proposed American Standard; published for trial and criticism)	.65
C63.3	Radio Noise and Field Intensity Meters, 20 to 1000 Megacycles/Second, Specifications for (NEMA 131-1952; RTMA 41) (Proposed American Standard; published for trial and criticism)	.60
C64.1-1950	Brushes for Electrical Machines (NEMA CB1-1951)	1.50
C65.1-1954	★Power-Operated Radio Receiving Appliances	.25
C67.1-1951	†Preferred Nominal Voltages, 100 Volts and Under	.25
C68.1-1953	Measurement of Test Voltage in Dielectric Tests (AIEE 4-1953)	.80
C70.1-1953	Household Automatic Electric Flatirons (NEMA DA1-1954)	1.00
C71.1-1950	Household Electric Ranges (NEMA ER1-1950)	.90
C72.1-1949	Household Automatic Electric Storage-Type Water Heaters (NEMA WH1-1949)	.90
C73-1941 R1946	Attachment Plugs and Receptacles, with Supplement C73a-1953 (NEMA WD2-1953) (†C73a-1953 sold separately.....50¢)	.75
C74-1942	†Machine Tool Electrical Standards (American War Standard) *Out of print*	
C76.1-1943	Apparatus Bushings and Test Code for Apparatus Bushings (AIEE 21-1942)	.60
C77.1-1943 R1953	Wet Tests (AIEE 29-1941)	.40

●C78 — Incandescent Lamps:

(Special price of series including PH22.84-1953 and PH22.85-1953, with binder, $8.00; without binder, $6.00)

		Price
C78.100-1953	†General Service for 115-, 120-, and 125-Volt Circuits	.25
C78.101-1949 R1953	†General Service for 230- and 250-Volt Circuits	.25
C78.102-1949 R1953	†Train, Locomotive, and Country Home Service 30-34 and 60-64 Volts	.25
C78.103-1949 R1953	†Street Railway Service	.25
C78.105-1949 R1953	†Spotlight and Floodlight Service 115, 120, and 125 Volts	.25
C78.106-1953	†Infrared Lamps for 115-125 Volt Service	.25
C78.107-1953	†Projector and Reflector Spotlight and Floodlight Lamps 115, 120, and 125 Volts	.25
C78.109-1949 R1953	†Street Series Service	.25
C78.140-1954	★†Miniature Incandescent Lamps	.25
C78.200-1949 R1953	†S-6 Bulb, Candelabra Screw Base and C-7 Bulb, Candelabra Screw Base	.25
C78.201-1949 R1953	†S-11 Bulb, Medium Screw Base	.25
C78.202-1949 R1953	†S-11 Bulb, Intermediate Screw Base	.25
C78.203-1949 R1953	†S-14 Bulb, Medium Screw Base	.25
C78.204-1949 R1953	†A-15 Bulb, Medium Screw Base	.25
C78.205-1949 R1953	†A-17 Bulb, Medium Screw Base	.25
C78.206-1949 R1953	†A-19 Bulb, Medium Screw Base (Over-all Length: Max 3 1/8 Inches, Min 3 7/8 Inches)	.25
C78.207-1949 R1953	†T-6½ Bulb, Intermediate Screw Base	.25
C78.208-1949 R1953	†T-10 Bulb, Medium Screw Base	.25
C78.209-1949 R1953	†T-10 Reflector Bulb, Medium Screw Base	.25
C78.210-1949 R1953	†A-19 Bulb, Medium Screw Base (Over-all Length: Max 4¼ Inches, Min 3 7/8 Inches)	.25
C78.211-1949 R1953	†A-19 Bulb, Medium Screw Base (Over-all Length: Max 4 7/8 Inches, Min 4 1/8 Inches)	.25
C78.212-1949 R1953	†T-8 Bulb, Medium Screw Base	.25
C78.213-1949 R1953	†PS-25 Bulb, Three-Contact Medium Screw Base	.25
C78.214-1949 R1953	†PS-25 Bulb, Three-Contact Mogul Screw Base	.25
C78.215-1949 R1953	†A-21 Bulb, Medium Screw Base (Over-all Length: Max 4 7/8 Inches, Min 4⅛ Inches)	.25
C78.216-1949 R1953	†A-21 Bulb, Medium Screw Base (Over-all Length: Max 5 1/16 Inches, Min 4 1/8 Inches)	.25
C78.217-1949 R1953	†A-21 Bulb, Medium Screw Base (Overall Length: Max 4 1/8 Inches, Min 4 1/16 Inches)	.25
C78.218-1949 R1953	†A-23 Bulb, Medium Screw Base	.25
C78.219-1949 R1953	†G-30 Bulb, Three-Contact Mogul Screw Base	.25
C78.220-1949 R1953	†PS-25 Bulb, Medium Screw Base	.25
C78.221-1949 R1953	†PS-30 Bulb, Medium Screw Base	.25
C78.223-1949 R1953	†PS-35 Bulb, Mogul Screw Base	.25
C78.224-1949 R1953	†PS-40 Bulb, Mogul Screw Base	.25
C78.225-1949 R1953	†PS-52 Bulb, Mogul Screw Base	.25
C78.226-1949 R1953	†P-25 Bulb, Medium Screw Base	.25
C78.233-1949 R1953	†G-30 Bulb, Medium Screw Base	.25
C78.234-1949 R1953	†G-40 Bulb, Mogul Screw Base (Over-all Length: Max 7 1/16 Inches, Min 6½ Inches)	.25
C78.235-1949 R1953	†G-40 Bulb, Mogul Screw Base (Over-all Length: Max 8 Inches, Min 7 1/16 Inches)	.25
C78.236-1949 R1953	†R-40 Bulb, Medium Skirted Screw Base	.25
C78.237-1949 R1953	†R-40 Bulb, Medium Screw Base	.25
C78.238-1949 R1953	†PAR-38 Bulb, Medium Skirted Screw Base	.25
C78.245-1949 R1953	†PS-25 Bulb, Mogul Screw Base	.25
C78.248-1949 R1953	†T-64 Bulb, Mogul Bipost Base	.25

		Price
C78.249-1949	†G-30 Bulb, Medium Skirted Screw Base..	*Withdrawn*
C78.251-1953	†R-30 Bulb Medium Screw Base	.25

●C78 — Electric Discharge Lamps, Dimensional and Electrical Characteristics of:

(Special price of series with binder, $5.00; without binder, $3.00)

C78.400-1951	†4-Watt T-5 Pre-heat Start	.25
C78.401-1951	†6-Watt T-5 Pre-heat Start	.25
C78.402-1951	†8-Watt T-5 Pre-heat Start	.25
C78.403-1951	†14-Watt T-12 Pre-heat Start	.25
C78.404-1951	†15-Watt T-8 Pre-heat Start	.25
C78.405-1951	†15-Watt T-12 Pre-heat Start	.25
C78.406-1951	†20-Watt T-12 Pre-heat Start	.25
C78.407-1951	†30-Watt T-8 Pre-heat Start	.25
C78.408-1951	†40-Watt T-12 Pre-heat Start	.25
C78.409-1951	†85-Watt T-17 Pre-heat Start	.25
C78.410-1951	†100-Watt T-17 Pre-heat Start	.25
C78.413-1951	†32-Watt T-10 12-Inch Circular Pre-heat Start	.25
C78.600-1951	†40-Watt T-12 Instant-Start	.25
C78.601-1951	†40-Watt T-17 Instant-Start	.25
C78.801-1951	†42-Inch T-6 Instant-Start Single-Pin Hot-Cathode	.25
C78.803-1951	†64-Inch T-6 Instant-Start Single-Pin Hot-Cathode	.25
C78.805-1951	†72-Inch T-8 Instant-Start Single-Pin Hot-Cathode	.25
C78.807-1951	†96-Inch T-8 Instant-Start Single-Pin Hot-Cathode	.25
C78.808-1951	†48-Inch T-12 Instant-Start Single-Pin Hot-Cathode	.25
C78.809-1951	†72-Inch T-12 Instant-Start Single-Pin Hot-Cathode	.25
C78.810-1951	†96-Inch T-12 Instant-Start Single-Pin Hot-Cathode	.25
C78.1100-1951	†20-Millimeter 52-Inch Cold-Cathode	.25
C78.1101-1951	†20-Millimeter 64-Inch Cold-Cathode	.25
C78.1102-1951	†20-Millimeter 76-Inch Cold-Cathode	.25
C78.1103-1951	†20-Millimeter 84-Inch Cold-Cathode	.25
C78.1104-1951	†25-Millimeter 93-Inch Cold-Cathode	.25
C78.1105-1951	†20-Millimeter 93-Inch Cold-Cathode	.25
C78.1200-1951	†8-Watt T-5 Bactericidal Lamp	.25
C78.1201-1951	†15-Watt T-8 Bactericidal Lamp	.25
C78.1202-1951	†30-Watt T-8 Bactericidal Lamp	.25

●C78 — Fluorescent Lamp Auxiliaries *(see also* Fluorescent Lamp Ballasts, C82):

C78.180	†Fluorescent Lamp Starters, Specifications for (Proposed American Standard; published for trial and criticism)	.35
C78.181	†Fluorescent Lamp Starters, Method of Testing (Proposed American Standard; published for trial and criticism)	.35

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C79.1-1954	★†Glass Bulbs Intended for Use with Electron Tubes and Electric Lamps, Nomenclature for	.50
C79.2-1954	★†Molded Glass Flares Intended for Use with Electron Tubes and Electric Lamps, Nomenclature for	.35

●C80 — Conduit:

C80.1-1953	†Rigid Steel Conduit, Zinc Coated, Specification for (NEMA 110-1953)	.50
C80.2-1953	†Rigid Steel Conduit, Enameled, Specification for (NEMA 111-1953)	.35
C80.3-1950	†Electrical Metallic Tubing, Zinc Coated, Specification for (NEMA 112-1950)	.35

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C81.1-1951	†Rolled Threads for Screw Shells of Electric Lamp Holders and for Screw Shells of Unassembled Lamp Bases, Dimensions for	.35

●C82 — Fluorescent Lamp Ballasts:

C82.1	†Fluorescent Lamp Ballasts, Specification for (Proposed American Standard; published for trial and criticism)	.35
C82.2	†Fluorescent Lamp Ballasts, Method of Measurement of (Proposed American Standard; published for trial and criticism)	.50
C82.3	†Fluorescent Lamp Reference Ballasts, Specification for (Proposed American Standard; published for trial and criticism)..	.35

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C83.1-1949	†Color Codes: Numerical Values, Decimal Multipliers, and Tolerances for Components for Electronic Equipment (RMA GEN-101) (Reaffirmation of C16.14-1949)	.35
C83.2-1949	†Components for Electronic Equipment, Preferred Values for RMA GEN-102) (Reaffirmation of C16.15-1949)	.35
C83.3-1951	†Piezoelectric Crystals, Terminology for (49 IRE 14.S1)	.80
C84.1-1954	★Preferred Voltage Ratings for A-C Systems and Equipment (EEI R-6; NEMA 117)	.70

For standard abbreviations and symbols in electrical engineering, see Y, Drawings and Symbols.

D — Automotive

D6.1-1948	Uniform Traffic Control Devices for Streets and Highways, Manual on	*Out of print*
D7.1-1941	†Inspection Requirements for Motor Vehicles	*Under revision—Out of print*
D8.1-1951	Railroad Highway Grade Crossing Protection (AAR Bulletin 3)	.50
D10.1-1951	Adjustable Face Traffic Control Signal Head Standards (ITE Technical Report 1)	.50
D11.1-1943	Pre-Timed, Fixed Cycle, Traffic Signal Controllers (ITE Technical Report 2)..	.50
D12.1-1953	Street and Highway Lighting	.50
D13.1-1950	Traffic-Actuated, Traffic Signal Controllers and Detectors, Specifications for	.50

G — Ferrous Materials and Metallurgy

G8.1-1947	Zinc (Hot-Galvanized) Coatings on Structural Steel Shapes, Plates and Bars, and Their Products, Specifications for (ASTM A123-47; AASHO M111-35)	.30
G8.2-1951	Zinc-Coated (Galvanized) Iron or Steel Sheets, Specifications for (ASTM A93-50T)	.30
G8.3-1944	Zinc-Coated (Galvanized) Iron or Steel Telephone and Telegraph Line Wire, Specifications for (ASTM A111-43)	*Under revision*
G8.4-1935	Zinc-Coated (Galvanized) Iron or Steel Tie Wires, Specifications for (ASTM A112-33)	.30
G8.5-1935	Zinc-Coated Iron or Steel Chain-Link Fence Fabric Galvanized After Weaving, Specifications for (ASTM A117-33).....	.30

		Price
G8.6-1943	Zinc-Coated Steel Wire Strand, "Galvanized" and Class A ("Extra Galvanized"), Specifications for (ASTM A122-41)	*Under revision*
G8.8-1937	Zinc-Coated (Galvanized) Wrought Iron Sheets, Specifications for (ASTM A163-36)	*Under revision*
G8.9-1948	Zinc-Coated (Galvanized) Iron or Steel Farm-Field and Railroad Right-of-Way Wire Fencing, Specifications for (ASTM A116-48)	.30
G8.10-1948	Zinc-Coated (Galvanized) Iron or Steel Barbed Wire, Specifications for (ASTM A121-48)	.30
G8.11-1944	Zinc-Coated Steel Wire Strand (Class B and Class C Coatings), Specifications for (ASTM A128-41)	.30
G9.1-1933	Carbon-Steel and Alloy-Steel Blooms, Billets and Slabs for Forging, Specifications for (ASTM A17-29)	*Under revision*
G12-1936	Refined Iron Bars, Specifications for (ASTM A41-36)	.30
G17.1-1944	Carbon-Steel Castings for Valves, Flanges, and Fittings for High-Temperature Service, Specifications for (ASTM A95-44)	.30
G17.2-1944	Alloy-Steel Bolting Material for High-Temperature Service, Specifications for (ASTM A96-44)	*Under revision*
G17.3-1947	Forged or Rolled Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for (ASTM A105-46)	.30
G20-1939	Mild Steel Plates, Specifications for (ASTM A10-39)	*Under revision*
G21-1939	Structural Rivet Steel, Specifications for (ASTM A141-39)	*Under revision*
G23-1939	Uncoated Wrought Iron Sheets, Specifications for (ASTM A162-39)	.30
G24.1-1947	Steel for Bridges and Buildings, Specifications for (ASTM A7-46)	*Under revision*
G25.1-1948	Gray Iron Castings, Specifications for (ASTM A48-48; AASHO M105)	.30
G26.1-1942	Cast-Iron Culvert Pipe, Specifications for (ASTM A142-38)	.30
G27.1-1942	Lightweight and Thin-Sectioned Gray Iron Castings, Specifications for (ASTM A190-40)	*Under revision*
G28.1-1942	Boiler Rivet Steel and Rivets, Specifications for (ASTM A31-40)	*Under revision*
G29.1-1945	Carbon-Steel Plates for Stationary Boilers and Other Pressure Vessels, Specifications for (ASTM A70-44)	*Under revision*
G30.1-1943	Low Tensile Strength Carbon-Steel Plates of Flange and Firebox Qualities, Specifications for (ASTM A89-43)	*Under revision*
G31.1-1947	Carbon-Silicon Steel Plates of Ordinary Tensile Ranges for Fusion-Welded Boilers and Other Pressure Vessels, Specifications for (ASTM A201-46)	*Under revision*
G32.1-1947	Chrome-Manganese-Silicon (CMS) Alloy-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (ASTM A202-46)	*Under revision*
G33.1-1945	Low-Carbon Nickel-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (ASTM A203-44)	*Under revision*
G34.1-1947	Molybdenum-Steel Plates for Boilers and Other Pressure Vessels, Specifications for (ASTM A204-46)	*Under revision*
G35.1-1947	High Tensile Strength Carbon-Silicon Steel Plates for Boilers and Other Pressure Vessels (Plates 4½ in. and Under in Thickness), Specifications for (ASTM A212-46)	*Under revision*
G36.1-1944	Alloy-Steel Castings for Valves, Flanges, and Fittings for High-Temperature Service, Specifications for (ASTM A157-44)	*Under revision*
G37.1-1949	Forged or Rolled-Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service, Specifications for (ASTM A182-48T)	*Under revision*
G38.1-1952	Carbon and Alloy-Steel Nuts for Bolts for High-Pressure and High-Temperature Service, Specifications for (ASTM A194-51)	.30
G39.1-1947	Structural Steel for Locomotives and Cars, Specifications for (ASTM A113-46)	*Under revision*
G40.1-1943	Low Tensile Strength Carbon-Steel Plates of Structural Quality for Welding, Specifications for (ASTM A78-43)	*Under revision*
G41.1-1947	Structural Silicon Steel, Specifications for (ASTM A94-39)	*Under revision*
G42.1-1942	High-Strength Structural Rivet Steel, Specifications for (ASTM A195-41)	*Under revision*
G43.1-1942	Axle-Steel Bars for Concrete Reinforcement, Specifications for (ASTM A160-39)	*Under revision*
G44.1-1942	Fabricated Steel Bar or Rod Mats for Concrete Reinforcement, Specifications for (ASTM A184-37)	.30
G45.1-1942	Welded Steel Wire Fabric for Concrete Reinforcement, Specifications for (ASTM A185-37; AASHO M55-37)	.30
G46.1-1947	Forged or Rolled Steel Pipe Flanges for General Service, Specifications for (ASTM A181-46)	*Under revision*
G48.1-1953	Malleable Iron Castings, Specifications for (ASTM A47-52; AASHO M106)	.30
G49.1-1948	Cupola Malleable Iron, Specifications for (ASTM A197-47)	.30
G50.1-1945	Carbon-Steel Castings for Miscellaneous Industrial Uses, Specifications for (ASTM A27-44)	*Under revision*
G51.1-1944	Carbon-Steel Castings Suitable for Fusion Welding for Miscellaneous Industrial Uses, Specifications for (ASTM A215-44)	*Under revision*
G52.1-1944	Alloy-Steel Castings for Structural Purposes, Specifications for (ASTM A148-44)	*Under revision*

H — Nonferrous Materials and Metallurgy

H7.1-1954 2nd ed.	★Copper and Copper-Base Alloy Forging Rod, Bar, and Shapes, Specifications for (ASTM B124-54)	*In press*
H8.1-1953 2nd ed.	Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines, Specifications for (ASTM B16-52)	.60
H13-1925	Plumbago Crucibles for Non-Tilting Furnaces in Non-Ferrous Foundry Practice, Outside Dimensions of	*Withdrawn*
H17.1-1942	Lake Copper Wire Bars, Cakes, Slabs, Billets, Ingots, and Ingot Bars, Specifications for (ASTM B4-42)	.30

		Price
H17.2-1943	Electrolytic Copper Wire Bars, Cakes, Slabs, Billets, Ingots, and Ingot Bars, Specifications for (ASTM B5-43; AASHO M110-45)	.30
H23.1-1954	Seamless Copper Water Tube, Specifications for (ASTM B88-51)	*In press*
H24.1-1949	Slab Zinc (Spelter), Specifications for (ASTM B6-49; AASHO M120)	.30
H25.1-1943	Rolled Zinc, Specifications for (ASTM B69-39; AASHO M113-39)	.30
H26.1-1954 2nd ed.	★Seamless Copper Pipe, Standard Sizes, Specifications for (ASTM B42-54)	*In press*
H27.1-1954 2nd ed.	★Seamless Red Brass Pipe, Standard Sizes, Specifications for (ASTM B43-54)	*In press*
H28.1-1953	Bronze Castings in the Rough for Locomotive Wearing Parts, Specifications for (ASTM B66-52; AAR M-503)	.30
H29.1-1953	Car and Tender Journal Bearings, Lined, Specifications for (ASTM B67-52; AAR M-501)	.30
H30.1-1954	★Copper-Silicon Alloy Wire for General Purposes, Specifications for (ASTM B-99 54)	*In press*
H31.1-1954	★Rolled Copper-Alloy Bearing and Expansion Plates and Sheets for Bridge and Other Structural Uses, Specifications for (ASTM B100-54; AASHO M108)	*In press*
H32.1-1953 2nd ed.	Brass Wire, Specifications for (ASTM B134-52)	.60
H33.1-1954 2nd ed.	★Leaded Red Brass (Hardware Bronze) Rod, Bar, and Shapes, Specifications for (ASTM B140-54)	*In press*

J — Rubber

J1.1-1955	★Sample Preparation for Physical Testing of Rubber Products, Methods of (ASTM D15-54T)	*In press*
J2.1-1953	Tension Testing of Vulcanized Rubber, Methods of (ASTM D412-51T)	.30
J3.1-1942	Adhesion of Vulcanized Rubber (Friction Test), Methods of Test for (ASTM D413-39)	.30
J4.1-1954	★Accelerated Aging of Vulcanized Rubber by the Oxygen-Pressure Method, Method of Test for (ASTM D572-53)	.30
J5.1-1954	★Accelerated Aging of Vulcanized Rubber by the Oven Method, Method of Test for (ASTM D573-53)	.30

● J6 — Specifications for Rubber Protective Equipment for Electrical Workers:

J6.1-1950	Rubber Insulating Line Hose (ASTM D1050-49T)	.60
J6.2-1950	Rubber Insulator Hoods (ASTM D1049-49T)	
J6.4-1950	Rubber Insulating Blankets (ASTM D1048-49T)	
J6.5-1950	Rubber Insulating Sleeves (ASTM D1051-49T)	
J6.3-1945	†Leather Protective Gloves (American War Standard)	.25
J6.6-1952	Rubber Insulating Gloves, Specifications for (ASTM D120-52T)	.30

K — Chemical Industry

K5-1922	Alloys of Lead, Tin, Antimony, and Copper, Methods of Chemical Analysis of (ASTM B18-36T)	*Under revision—Out of print*
K12-1921	Battery Assay of Copper, Methods of (ASTM B34-36T)	*Under revision*
K13.1-1950	†Identification of Gas-Mask Canisters, Safety Code for	.35
K15.1-1947	Chemical Analysis of White Pigments, Methods of (ASTM D34-47)	*Under revision*
K16.1-1944	Chemical Analysis of Dry Red Lead, Methods of (ASTM D49-44)	.30
K18.1-1948	Laboratory Sampling and Analysis of Coal and Coke, Methods of (ASTM D271-48)	.50
K20.1-1936	Cubic Foot Weight of Crushed Bituminous Coal, Method of Test for (ASTM D291-29)	.30
K20.2-1936	Cubic Foot Weight of Coke, Method of Test for (ASTM D292-29)	.30
K20.3-1951	Tumbler Test for Coke, Method of (ASTM D294-50)	.30
K20.4-1948	Drop Shatter Test for Coke, Method of (ASTM D141-48)	.30
K20.5-1936	Volume of Cell Space of Lump Coke, Method of Test for (ASTM D167-24)	.30
K21.1-1953	Toluene Insoluble Solid Matter in Rosin (Chiefly Sand, Chips, Dirt, and Bark), Method of Test for (ASTM D269-52)	.30
K22.1-1944	Zinc Oxide, Specifications for (ASTM D79-44)	.30
K23.1-1943	Basic-Carbonate White Lead, Specifications for (ASTM D81-43)	.30
K24-1941	Red Lead, Specifications for (ASTM D83-41)	.30
K25-1941	Mineral Iron Oxide, Specifications for (ASTM D84-41)	*Under revision*
K26.1-1947	Lampblack, Specifications for (ASTM D209-47)	.30
K27.1-1947	Chrome Yellow and Chrome Orange, Specifications for (ASTM D211-47)	.30
K28.1-1947	Reduced Chrome Green, Specifications for (ASTM D213-47)	.30
K29.1-1947	Iron Blue, Specifications for (ASTM D261-47; AASHO M131)	.30
K32.1-1953	Spirits of Turpentine, Specifications for (ASTM D13-51)	.30
K33-1937	Sampling and Testing Turpentine, Methods of (ASTM D233-36)	*Under revision*
K34.1-1949	Raw Linseed Oil, Specifications for (ASTM D234-48; AASHO M125-49)	.30
K35.1-1949	Boiled Linseed Oil, Specifications for (ASTM D260-48)	.30
K36.1-1947	Bone Black, Specifications for (ASTM D210-47)	.30
K37.1-1946	Chrome Oxide Green, Specifications for (ASTM D263-46)	.30
K41.1-1953 R1954	Specific Gravity of Pigments, Methods of Test for (ASTM D153-54)	.30
K42.1-1945	Coarse Particles in Pigments, Pastes, and Paints, Methods of Test for (ASTM D185-45)	.30
K44.1-1951	Yellow, Orange, Red, and Brown Pigments Containing Iron and Manganese, Methods of Chemical Analysis of (ASTM D50-50)	.30
K45-1941	Titanium Dioxide Pigments, Specifications for (ASTM D476-41)	*Under revision*
K46-1940	Sampling Coal for Analysis, Method of (ASTM D21-40)	*Under revision*
K47.1-1945	Basic Sulfate White Lead, Specifications for (ASTM D82-44)	.30
K48-1941	Blue Lead; Basic Sulfate, Specifications for (ASTM D405-41)	.30
K49.1-1954	★Pure Para Red Toner, Light, Specifications for (ASTM D475-49)	.30
K50.1-1949	Zinc Yellow (Zinc Chromate), Specifications for (ASTM D478-49)	.30

		Price
K51-1941	Alkalinity or Acidity of Pigments, Method of Test for (ASTM D278-31)	*Under revision*
K52-1941	Bleeding of Pigments, Methods of Test for (ASTM D279-31)	.30
K53-1941	Hydroscopic Moisture (and Other Matter Volatile Under the Test Conditions) in Pigments, Method of Test for (ASTM D280-33)	.30
K54-1941	Oil Absorption of Pigments, Method of Test for (ASTM D281-31)	.30
K55.1-1954	★Acetone Extract in Black Pigments, Method of Test for (ASTM D305-51)	.30
K56-1941	Tinting Strength of White Pigments, Method of Test for (ASTM D332-36)	.30
K57-1953	Mass Color and Tinting Strength of Color Pigments, Method of Test for (ASTM D387-52T)	.30
K58.1-1954	★Chemical Analysis of Yellow, Orange, and Green Pigments Containing Lead Chromate, and Chromium Oxide Green, Methods for (ASTM D126-50T)	.30
K59-1941	Chemical Analysis of Dry Mercuric Oxide, Method of (ASTM D284-33)	.30

●K60 — Soaps and Detergents:

K60.1-1952	Chip Soap, Specifications for (ASTM D496-51)	.30
K60.2-1953	Ordinary Laundry Bar Soap, Specifications for (ASTM D497-52)	.30
K60.3-1952	Powdered Soap (Nonalkaline Soap Powder), Specifications for (ASTM D498-51)	.30
K60.4-1949	White Floating Toilet Soap, Specifications for (ASTM D499-48)	.30
K60.5-1949	Alkaline Soap Powder, Specifications for (ASTM D534-42)	.30
K60.6-1954	★Milled Toilet Soap, Specifications for (ASTM D455-53T)	*In press*
K60.7-1949	Built Soap, Powdered, Specifications for (ASTM D533-44)	.30
K60.8-1949	Compound Chip Soap (with Rosin), Specifications for (ASTM D690-48)	.30
K60.9-1949	Compound Powdered Soap (Granulated, with Rosin), Specifications for (ASTM D691-44)	.30
K60.10-1949	Caustic Soda, Specifications for (ASTM D456-39)	.30
K60.11-1949	Soda Ash, Specifications (ASTM D458-39)	.30
K60.12-1949	Trisodium Phosphate, Specifications for (ASTM D538-44)	.30
K60.13-1949	Salt-Water Soap, Specifications for (ASTM D593-42)	.30
K60.14-1952	Liquid Toilet Soap, Specifications for (ASTM D799-51)	.30
K60.15-1949	Olive Oil Chip Soap (Type A, Straight; Type B, Blended), Specifications for (ASTM D630-42)	.30
K60.16-1953	Palm Oil Chip Soap (Type A, Straight; Type B, Blended), Specifications for (ASTM D536-52)	.30
K60.17-1949	Modified Soda (Sesquicarbonate Type), Specifications for (ASTM D457-39)	.30
K60.18-1949	Sodium Metasilicate, Specifications for (ASTM D537-41)	.30
K60.19-1949	Sodium Sesquisilicate, Specifications for (ASTM D594-41)	.30
K60.20-1949	Tetrasodium Pyrophosphate (Anhydrous), Specifications for (ASTM D595-45)	.30
K60.21-1950	Sampling and Chemical Analysis of Alkaline Detergents, Methods of (ASTM D501-49)	*Under revision*

		Price
	L — Textile Industry	
L1.1-1947	†Textile Safety Code	.50
L3.1-1941	Cotton Rubber-Lined Fire Hose for Public and Private Fire Department Use, Specifications for (ASTM D296-38)	*Under revision*
L4.1-1948	†Bleached Cotton Bed Sheets and Pillowcases, Specifications for	.25
L10-1936 R1945	Shrinkage in Laundering of Woven Cotton Cloth, Method of Test for (AATCC 14-52; ASTM D437-36)	.30
L11.1-1941	†Body Sizes for Boys' Garments	.35

●L12 — Definitions (Including Tolerances) for Filling Materials for Bedding and Upholstery:

L12.1-1946	†Cotton	.50
L12.2-1946	†Wool	
L12.4-1946	†Miscellaneous	
L13.1-1942	Tubular Sleeving and Braids, Methods of Testing and Tolerances for (ASTM D354-41)	.30

●L14 — Textile Test Methods:

L14.1-1949	†Accelerated Ageing of Textiles Dyed with Sulfur Colors (AATCC 26-52)	.25
L14.2-1949	†Colorfastness of Textiles to Acids and to Alkalies (AATCC 6-52)	.25
L14.3-1949	†Colorfastness of Wool Textiles to Carbonizing (AATCC 11-52)	.25
L14.4-1949	†Colorfastness of Silk to Degumming (AATCC 7-52)	.25
L14.5-1949	†Colorfastness of Textiles to Fulling (AATCC 2-52)	.25
L14.6-1949	†Colorfastness of Wool Textiles to Mill Washing and Scouring (AATCC 1-52)	.25
L14.7-1949	†Colorfastness of Silk to Peroxide Bleaching (AATCC 13-52)	.25
L14.8-1949	†Colorfastness of Textiles to Sea Water (AATCC (63-52)	.25
L14.9-1949	†Colorfastness of Textiles to Stoving (AATCC 9-52)	.25
L14.10-1949	†Test for Mercerization (AATCC Temporary Test Method 51-52)	.25
L14.11-1949	†Evaluation of Wetting Agents (AATCC 17-52)	.25
L14.12-1954	★Definition of Terms Relating to Textile Materials (ASTM D123-52)	*In press*
L14.13-1953	Testing and Tolerances for Cotton Yarns, Methods of (ASTM D180-52T)	.30
L14.14-1949	Testing and Tolerances for Cotton Sewing Threads, Methods of (ASTM D204-42)	.30
L14.15-1949	Test for Osnaburg Cement Sacks, Methods of (ASTM D205-39)	*Withdrawn*
L14.16-1949	Testing and Tolerances for Woven Tapes, Methods of (ASTM D259-44)	.30
L14.17-1949	Testing and Tolerances for Certain Light and Medium Weight Cotton Fabrics, Methods of (ASTM D274-36)	.30
L14.18-1953	Asbestos Yarns, Specifications and Methods of Test for (ASTM D299-52T)	.30
L14.19-1949	Determining Relative Humidity, Method of (ASTM D337-34)	.30
L14.20-1949	Holland Cloth, Methods of Test for (ASTM D376-35)	.30
L14.21-1949	Woolen Yarns, Specifications and Methods of Test for (ASTM D403-48T)	*Withdrawn*

		Price
L14.22-1949	Worsted Yarns, Specifications and Methods of Test for (ASTM D404-48T) ... *Withdrawn*	
L14.23-1951	Testing Cotton Fibers, General Methods of (ASTM D414-49T) ..... *Under revision*	
L14.25-1949	Testing Pile Floor Covering, Methods of (ASTM D418-42)	.30
L14.26-1951	Fineness of Wool, Methods of Test for (ASTM D419-50T)	.30
L14.27-1949	Testing and Tolerances for Certain Carded Cotton Gray Goods, Methods of (ASTM D433-39)	.30
L14.28-1954	★Testing and Tolerances for Certain Wool and Part Wool Fabrics, Methods for (ASTM D462-53)	.30
L14.29-1954	★Fineness of Wool Tops, Specifications and Methods of Test for (ASTM D472-53T)	.30
L14.30-1949	Testing and Tolerances for Spun Rayon and Estron Yarns and Threads, Methods of (ASTM D507-44)	.30
L14.31-1949	Testing and Tolerances for Yarns Spun from Mixed Fibers, Methods of (ASTM D508-43)	.30
L14.32-1951	Fiber Length of Wool, Method of Test for (ASTM D519-49)	.30
L14.33-1949	Testing Rayon and Estron Staple, Methods of (ASTM D540-44)	.30
L14.34-1953	Testing and Tolerances for Single Jute Yarn, Methods of (ASTM D541-52).....	.30
L14.35-1953	Testing Woven Asbestos Cloth, Methods of (ASTM D577-52)	.30
L14.36-1951 2nd ed.	Testing and Tolerances for Glass Yarn, Methods of (ASTM D578-50T) . *Under revision*	
L14.37-1951	Testing and Tolerances for Woven Glass Fabrics, Methods of (ASTM D579-49)..	.30
L14.38-1951	Testing and Tolerances for Woven Glass Tapes, Methods of (ASTM D580-49)....	.30
L14.39-1951	Testing and Tolerances for Woven Glass Tubular Sleeving and Braids, Methods of (ASTM D581-49)	.30
L14.40-1954	★Clean Wool Content of Wool in the Grease, Tentative Methods of Test for (ASTM D584-53T) ..... *In press*	
L14.41-1953	Testing Asbestos Tubular Sleeving, Methods of (ASTM D628-52)	.30
L14.42-1949	Testing and Tolerances for Certain Fine Staple Cotton Gray Goods, Methods of (ASTM D679-44)	.30
L14.43-1949	Testing and Tolerances for Certain All-Cotton and Cotton and Rayon Fine Fancy Goods, Methods of (ASTM D680-44)	.30
L14.44-1953	Testing and Tolerances for Jute Rove and Plied Yarn for Electrical and Packing Purposes, Methods of (ASTM D681-52)..	.30
L14.45-1953	Testing and Tolerances for Rope made from Bast and Leaf Fibers, Methods of (ASTM D738-52)	.30
L14.46-1953	Testing and Tolerances for Spun, Twisted, or Braided Products Made from Flax, Hemp, Ramie, or Mixtures Thereof, Methods of (ASTM D739-52)	.30
L14.47-1949	Compatibility of Glass Yarn with Insulating Varnish, Method of Test for (ASTM D886-46T) ..... *Under revision*	
L14.48-1953	Designation of Linear Density of Fibers, Yarns, and Other Textile Materials in Universal Units, Practice for (ASTM D861-52)	.30
L14.49-1949	Test for Small Amounts of Copper and Manganese in Textiles, Method of (ASTM D377-52T)	.30
L14.50-1949	Cotton Goods for Rubber and Pyroxylin Coating, Specifications and Methods of Test for (ASTM D334-40)	.30
L14.51-1949	Air Permeability of Textile Fabrics, Methods of Test for (ASTM D737-46)	.30
L14.52-1953	Testing Felt, Methods of (ASTM D461-51) ..... *Under revision*	
L14.53-1951	†Colorfastness to Light (AATCC 16A-54; 16B-52)	
L14.54-1951	†Colorfastness of Acetate Rayons to Atmospheric Fumes (AATCC 23-52)	
L14.55-1951	†Resistance of Textiles to Mildew and Rot, and Evaluation of Textile Fungicides (AATCC 30-52)	
L14.56-1951	†Colorfastness to Perspiration (AATCC 15-52)	
L14.57-1951	†Colorfastness to Chlorine Bleaching (AATCC 3-52)	
L14.58-1951	†Colorfastness to Peroxide Bleaching (AATCC 29-52)	
L14.59-1951	†Water Resistance of Fabrics — Resistance to Hydrostatic Pressure (AATCC 18-52)	
L14.60-1951	†Resistance to Water Spray (AATCC 22-52)	
L14.61-1951	†Resistance to Absorption of Water During Immersion (AATCC 21-52)	
L14.63-1951	†Colorfastness to Pleating (AATCC 31-52)	
L14.64-1951	†Resistance of Textile Fabrics and Yarns to Insect Pests (AATCC 24-52)	
L14.65-1951	†Evaluation of Insect Pest Deterrents on Textiles (AATCC 28-52)	
L14.66-1954	★Textile Testing Machines, Specifications for (ASTM D76-53)	.30
L14.67-1951	Testing and Tolerances for Knit Goods, Methods of (ASTM D231-46).....	.30
L14.68-1951	Testing Woven Textile Fabrics, General Methods of (ASTM D39-49)	.30
L14.69-1952	†Flammability of Clothing Textiles, Test Method for (AATCC 33-52; ASTM D1230-52T)	.50

Under revision

●L17 — Specifications for Women's Industrial Clothing (American War Standards):

L17.1-1944	†Bungalow Aprons, and Wrap-around and Coat Style Dresses	.50
L17.2-1944	†Slacks, Dungarees, Overalls, and Coveralls	.50
L17.3-1944	†Jackets, Shirts, and Aprons	.50
L17.4-1944	†Regular and Princess Model Coat Style Dresses	.35

●L18 — Specifications for Protective Occupational (Safety) Clothing (American War Standards):

L18.1-1944	†Leather Aprons	.50
L18.2-1944	†Cape Sleeves and Bibs	
L18.3-1944	†Knee-Length Leggings	
L18.4-1944	†Leather Coats	
L18.5-1944	†Leather Overalls	
L18.6-1944	†Leather Sleeves	
L18.7-1944	†Welders' Leather Gauntlet Gloves	.50
L18.8-1944	†Protective Leather Gloves, Steel-Stapled..	
L18.9-1944	†Asbestos Gloves	
L18.10-1944	†Asbestos Gloves, Leather Reinforced	
L18.11-1944	†Asbestos Mittens	
L18.12-1944	†Asbestos Mittens, Leather Reinforced	

		Price
L18.14-1944	†Asbestos Aprons (Bib Type)	.50
L18.15-1944	†Asbestos Cape Sleeves and Bibs	
L18.16-1944	†Asbestos Leggings (Knee and Hip Length)	
L18.17-1944	†Asbestos Coats	
L18.18-1945	†Leather One-Finger Mittens	.50
L18.19-1945	†Leather Mittens	
L18.20-1945	†Asbestos One-Finger Mittens	
L18.21-1945	†Flame-Resistant Fabric Aprons (Bib Type)	.50
L18.22-1945	†Flame-Resistant Fabric Leggings (Knee and Hip Length)	
L18.23-1945	†Flame-Resistant Fabric Coats	
L18.24-1945	†Flame-Resistant Fabric Pants	
L18.25-1945	†Flame-Resistant Fabric Coveralls	
L18.26-1945	†Flame-Resistant Fabric Spats	.50
L18.27-1945	†Leather Spats	
L18.28-1945	†Asbestos Spats	
L18.29-1945	†Chemical-Resistant Gloves	.35

●L22 — Rayon and Acetate Fabrics, Minimum Requirements:

(Complete, Bound.....$4.25)

L22.1.1 (Rev)-1952 through L22.1.24 (Rev)-1952	†Part I, Women's and Girls' Rayon Wearing-Apparel Fabrics (Part I and Test Methods..$3.00)	1.00
L22.2.1 (Rev)-1952 through L22.2.16 (Rev)-1952	†Part II, Men's and Boys' Rayon Wearing-Apparel Fabrics (Part II and Test Methods..$2.80)	.80
L22.3.1-1952 through L22.3.11-1952	†Part III, Rayon Home-Furnishings Fabrics (Part III and Test Methods..$2.65)	.65
	†Part IV, Test Methods	2.25

M — Mining

M2.1-1951	Installing and Using Electrical Equipment in Coal Mines, Safety Rules for (BMTP 402)	.20
M5-1932	Screen Testing of Ores (Hand Method), Methods for	.25
M6-1931	†Drainage of Coal Mines	.75
M7.1-1933	Frogs, Switches, and Turnouts for Coal Mine Tracks (Drawings for Light Rail Turnouts)	.75
M7.2-1935	Frogs, Switches, and Turnouts for Coal Mine Tracks (Drawings for Heavy Rail Turnouts)	
M11-1927	Wire Rope for Mines	*Under revision—Out of print*
M12.1-1946	†Construction and Maintenance of Ladders and Stairs for Mines	.35
M13-1925 R1942	†Rock-Dusting Coal Mines to Prevent Coal Dust Explosions	.25
M14-1930	†Explosives in Bituminous Coal Mines, Use of	.35
M15-1931	†Coal Mine Transportation, Safety Code for	.35
M17-1930	†Fire Fighting Equipment in Metal Mines	*Gratis*
M18-1928	†Underground Transportation in Metal Mines	*Gratis*
M19-1928	†Mechanical Loading Underground in Metal Mines	*Gratis*
M20.1-1938	Classification of Coals by Rank, Specifications for (ASTM D388-38)	.30
M20.2-1937	Classification of Coals by Grade, Specifications for (ASTM D389-37)	.30
M20.3-1944	Designating the Size of Coal from Its Screen Analysis, Method for (ASTM D431-44)	.30
M20.4-1939	Commercial Varieties of Bituminous and Subbituminous Coals, Definitions for (ASTM D493-39)	.30
M24-1932	†Installing and Using Electrical Equipment in Metal Mines, Safety Rules for	*Gratis*

O — Wood Industry

O1.1-1954	★†Woodworking Machinery, Safety Code for	1.00
O4a-1927	Testing Small Clear Specimens of Timber, Methods of (ASTM D143-27)	*Under revision*
O4b-1927	Static Tests of Timbers in Structural Sizes, Methods of (ASTM D198-27)	.30
O5.1-1948	†Wood Poles, Specifications and Dimensions for	.75
O6-1939	Round Timber Piles, Specifications for (ASTM D25-37)	*Under revision*

P — Pulp and Paper Industry

P1-1936	†Paper and Pulp Mills, Safety Code for	*Under revision—Out of print*

PH — Photography and Motion Pictures

●PH1 — Characteristics of Photographic Films, Plates, and Papers:

(Special price of series, $7.00)

PH1.1-1953	†Designation for Thickness of Photographic Paper (Revision of Z38.1.44-1944)	.25
PH1.2-1952	†5¼- x 2⅛-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.32-1945)	.25
PH1.3-1952	†5½- x 2⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.33-1945)	.25
PH1.4-1952	†7- x 1⅜-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.34-1945)	.25
PH1.5-1952	†7- x 2⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.36-1945)	.25
PH1.6-1952	†7- x 4⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.37-1945)	.25
PH1.7-1952	†9½- x 4-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.38-1945)	.25
PH1.8-1952	†9½- x 5$\frac{7}{16}$-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.39-1945)	.25
PH1.9-1952	†9½- x 6⅝-Inch Aerial Film Spools, Dimensions for (Revision of Z38.1.40-1945)	.25
PH1.10-1952	†Roll Film and Unsensitized Leaders and Trailers for Aerial Photography, Dimensions for (Revision of Z38.1.41-1944)	.25
PH1.11-1953	†Photographic Paper Rolls, Dimensions for (Revision of Z38.1.5-1943 and Partial Revision of Z38.1.6-1943)	.25
PH1.12-1953	†Photographic Paper Sheets, Dimensions for (Revision of Z38.1.43-1947 and Partial Revision of Z38.1.6-1943)	.25
PH1.13-1953	†Dimensions for Molded-Type Cores for Photographic Film and Paper Rolls (Revision of Z38.1.48-1947)	.25
PH1.14-1953	†35-Millimeter Film Magazines for Still Picture Cameras, Dimensions for (Revision of Z38.1.47-1946)	.25
PH1.15-1953	†Industrial X-Ray Sheet Film (Inch Sizes), Dimensions for (Revision of Z38.1.25-1947)	.25
PH1.16-1953	†Graphic Arts Sheet Film (Inch Sizes), Dimensions for (Revision of Z38.1.26-1947)	.25

		Price
PH1.17-1953	†Medical X-Ray Sheet Film (Inch and Centimeter Sizes), Dimensions for (Revision of Z38.1.27-1947)	.25
PH1.18-1953	†Professional Portrait and Commercial Sheet Film (Inch Sizes), Dimensions for (Revision of Z38.1.28-1947)	.25
PH1.19-1944 R1952	†Emulsion Side of Photographic Sheet Films, Designation of (Reaffirmation of Z38.1.42-1944)	.25

●Photographic Films, Plates, and Papers *(Continued)*

These Z38 numbers will be changed to PH1 as the standards are revised or reaffirmed.

Z38.1.1-1951	†Film Packs, Dimensions for	.25
Z38.1.3-1948	†70-Millimeter Perforated (and Unperforated) Film (Cutting and Perforating Standard), Dimensions for	.25
Z38.1.7-1950	†Amateur Roll Film, Backing Paper, and Film Spools, Dimensions for	.75
Z38.1.29-1949	†Professional Portrait and Commercial Sheet Film (Centimeter Sizes), Dimensions for	.25
Z38.1.30-1951	†Photographic Dry Plates (Inch Sizes), Dimensions for	.25
Z38.1.31-1944 R1949	†Photographic Dry Plate (Centimeter Sizes), Dimensions for	.25
Z38.1.49-1951	†35-Millimeter Magazine Film (for Miniature Cameras, Dimensions for	.25
Z38.1.52-1951	†16-Millimeter 100-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.1.53-1951	†16-Millimeter 200-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.1.54-1951	†35-Millimeter 100-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.1.55-1951	†70-Millimeter 100-Foot Film Spool for Recording Instruments and Still Picture Cameras, Dimensions for	.25
Z38.3.1-1943 R1948	†Definition of Safety Photographic Film	.35
Z38.3.2-1945	†Films for Permanent Records, Specifications for	.50
Z38.3.3-1946	†35-Millimeter Slidefilm Projection Rolls, Specifications for	.25
Z38.7.8-1947	†Microfilms, Practice for	.25

●PH2 — Photographic Sensitometry

(Special price of series, $3.00)

PH2.1-1952	†Spectral Diffuse Densities of Three-Component Subtractive Color Films	.35
PH2.2-1953	†Sensitometry and Grading of Photographic Papers (Revision of Z38.2.3-1947)	.50
PH2.3-1953	†Relative Photographic Efficiency of Illuminants, Method for Determining the	*Under revision—Out of print*
PH2.4-1953	†Exposure Guide Numbers for Photographic Lamps, Method for Determining	.50
PH2.5-1954	†Photographic Speed and Exposure Index, Method for Determining	.50
PH2.6-1954	★†Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, Methods of Determining (Revision of Z38.2.4-1946)	.75
PH2.7-1955	★†Photographic Exposure Computer (Revision of Z38.2.2-1949) (Special quantity discounts apply)	1.50

		Price
●Photographic Sensitometry *(Continued)*		
These Z38 numbers will be changed to PH2 as the standards are revised and reaffirmed.		
Z38.2.4-1946	†Spectral-Sensitivity Indexes and Group Numbers for Photographic Emulsions, Method for Determining	.50
Z38.2.5-1946	†Diffuse Transmission Density	.75
Z38.2.6-1948	†General-Purpose Photographic Exposure Meters (Photoelectric Type)	.50
Z52.43-1944	Photographic Flash Lamps, including Supplement Z52.43a (Federal Specification W-L-122 and Supplement) (American War Standard)	*Under revision*

●PH3 — Photographic Apparatus:

(Special price of series, $7.50)

PH3.1-1952	†Back Window Location for Roll Film Cameras (Revision of Z38.4.9-1944)	.25
PH3.2-1952	†Performance Characteristics of Focal-Plane Shutters Used in Still Picture Cameras, Method for Determining	.35
PH3.3-1952	†Exposure-Time Markings for Focal-Plane Shutters Used in Still Picture Cameras	.25
PH3.4-1952	†Performance Characteristics of Between-the-Lens Shutters Used in Still Picture Cameras, Method for Determining	.35
PH3.5-1952	†Exposure-Time Markings for Between-the-Lens Shutters Used in Still Picture Cameras	.25
PH3.6-1952	†Tripod Connections for American Cameras, ¼-Inch-20 Thread (Revision of Z38.4.1-1942)	.25
PH3.7-1952	†Tripod Connections for Heavy-Duty or European Cameras, ⅜-Inch-16 Thread with Adapter for ¼-Inch-20 Tripod Screws (Revision of Z38.4.2-1942)	.25
PH3.8-1953	†Contact Printers, Specifications for (Revision of Z38.7.10-1944)	.25
PH3.9-1953	†Masks (Separate) for Use in Photographic Contact Printing of Roll Film Negatives, Specifications for (Revision of Z38.7.12-1944)	.25
PH3.10-1954	★†Threads for Attaching Mounted Lenses to Photographic Equipment (Revision of Z38.4.11-1944)	*In press*
PH3.11-1953	†Stereo Still Pictures on 35-Millimeter Film (5-Perforation Format) Dimensions for	.25
PH3.12-1953	†Attachment Threads for Lens Accessories, Specifications for (Revision of Z38.4.12)	.25
PH3.14-1944 R1952	†Front Lens Mounts for Cameras, Dimensions of (Reaffirmation of Z38.4.10-1944)	.25
PH3.15-1944 R1952	†Printing Frames (Specifications for (Reaffirmation of Z38.7.11-1944)	.25
PH3.16-1947 R1952	†Resolving Power of Lenses for Projectors for 35-mm Slidefilm and 2- x 2-Inch Slides, Method for Determining (Reaffirmation of Z38.7.16-1947)	.25
PH3.17	†Photographic Filter Sizes, Specifications for (Proposed American Standard; published for trial and criticism)	.25
PH3.18	†Internal Synchronization of Front Shutters, Criteria for Classifying and Testing the (Proposed American Standard; published for trial and criticism)	.35
PH3.19-1948	★†Radiographic Intensifying Screens, Dimensions for (Reaffirmation of Z38.1.50-1948)	.25

● Photographic Apparatus *(Continued)*

These Z38 numbers will be changed to PH3 as the standards are revised or reaffirmed.

		Price
Z38.1.51-1951	†Photographic Double Film Holders of the Lock-Rib Type, Dimensions for	.25
Z38.4.3-1947	†Distance Scales Marked in Feet for Focusing Camera Lenses	.25
Z38.4.4-1942 R1947	†Focal Lengths of Lenses, Marking	*Under revision*
Z38.4.5-1950	†Shutter Cable Release Tip and Socket with Taper (European) Thread	.25
Z38.4.6-1950	†Shutter Cable Release Tip and Socket with Straight (American) Thread	.25
Z38.4.7-1950	†Lens Aperture Markings	.25
Z38.4.8-1950	†Roll Film Cameras, Picture Sizes for	.25
Z38.4.11-1944	†Threads for Attaching Mounted Lenses to Photographic Equipment	.25
Z38.4.13-1948	†Distance Scales Marked in Meters for Focusing Camera Lenses	.25
Z38.4.19-1948	†Nomenclature, Parts of a Photographic Objective Lens	.25
Z38.4.20-1948	†Apertures and Related Quantities Pertaining to Photographic Lenses, Methods of Designating and Measuring	.25
Z38.4.21-1948	†Focal Lengths and Focal Distances of Photographic Lenses, Methods of Designating and Measuring	.35
Z38.4.26-1951	†Flash Synchronizing Equipment, Bipost-Type, Connecting Cord Ends and Pins	.25
Z38.4.27-1951	†Flash Synchronizing Equipment, Bayonet-Type, Connecting Cord Ends and Pins	.25
Z38.7.4-1944 R1948	†Projectors for Opaque Materials for Use in Small Auditoriums, Specifications for	.25
Z38.7.5-1948	†Printing and Projection Equipment, Methods of Testing	.25
Z38.7.6-1950	†Photographic Enlargers, Methods for Testing	.35
Z38.7.9-1946	†Microfilm Readers, Specifications for	.25
Z38.7.14-1949	†Lantern Slide Projectors, Specifications for	.25
Z38.7.15-1945	†Slidefilm Projectors, Specifications for	.25
Z38.7.17-1946	†Reels for Processed Microfilm	.25
Z38.7.19-1950	†Lantern Slides, Dimensions for	.25

● PH4 — Photographic Processing:

(Special price of series, $12.25)

		Price
PH4.2-1952	†Sheet Film Processing Tanks, Specifications for (Revision of Z38.8.15-1949)	.25
PH4.3-1952	†Photographic Trays, Specifications for	.25
PH4.4-1952	†Channel-Type Photographic Hangers, Plates and Sheet Film, Specifications for	.25
PH4.5-1953	†Temperature for Photographic Processing Solutions (Revision of Z38.8.1-1944)	.25
PH4.6-1953	†Converting Weights and Measures for Photographic Use, Method for (Revision of Z38.8.2-1945)	.35
PH4.8-1953	†Thiosulfate Content of Processed Photographic Film, Method of Determining the	.50
PH4.10-1953	†Photographic Grade Blotters, Requirements for	.25
PH4.12-1954	★†Stability of the Images of Processed Black-and-White Films, Plates, and Papers, Methods for Indicating the (Revision of Z38.8.17-1948)	.50
PH4.13-1954	★†Chemical Resistivity and Photographic Inertness of Constructional Materials for Processing Equipment, Method and Criteria for Determining the	.50
PH4.15-1945	★†Bite of Film Clip, Dimensions for (Reaffirmation of Z38.8.4-1945)	.25

● Photographic Processing *(Continued)*

These Z38 numbers will be changed to PH4 as the standards are revised or reaffirmed.

		Price
Z38.8.3-1947	†Photographic Processing Manipulation of Films and Plates, Practice for	.50
Z38.8.6-1949	†Photographic Processing Manipulation of Paper, Practice for	.50
Z38.8.7-1946	†Radiographic Film Processing Tanks, Internal Dimensions for	.25
Z38.8.8-1946	†Deep Tanks for Commercial Photofinishing, Internal Dimensions for	.25
Z38.8.9-1946	†Scales, Graduates, and Thermometers for Use in Photography, Accuracy of	.25
Z38.8.11-1948	†Photographic Thermometers	.25
Z38.8.12-1948	†Photographic Graduates	.25
Z38.8.13-1950	†Safety-Time of Photographic Dark-room Illumination, Procedure for Determining the	.25
Z38.8.14-1950	†Photographic Wetting Agents, Requirements for	.25
Z38.8.17-1948	Replaced by PH4.12-1954	
Z38.8.18-1948	†Chromium-Plated Surfaces for Ferrotyping	.25
Z38.8.19-1948	†Maximum Safe Temperatures for Photographic Processing Solutions, Method for Determining	.25
Z38.8.20-1948	†Melting Point of the Photographic Layer of Films, Plates, and Papers, Method for Determining the	.25
Z38.8.21-1950	†Photographic Filing Envelopes for Storing Processed Photographic Films, Plates, and Papers, Requirements for	.25
Z38.8.23-1949	†X-Ray Sheet Film Hangers (Clip-Type)	.25
Z38.8.25-1950	†Residual Thiosulfate and Tetrathionate in Processed Photographic Papers, Method for Determining	.35

● Specifications for Photographic Grade Chemicals:

PH4 numbers referring to standards for Photographic Grade Chemicals can be found under Z38.8 below. They are listed numerically according to the number after the second decimal point.

Acids

		Price
PH4.105-1952	†Photographic Grade Sodium Acid Sulfate, Fused ($NaHSO_4$) (Sodium Bisulfate, Fused; Niter Cake), Specification for	.25
PH4.107-1954	★†Photographic Grade Citric Acid, Anhydrous, Specification for	.25
Z38.8.100-1949	†Acetic Acid, Glacial	.25
Z38.8.101-1949	†Sulfuric Acid	.25
Z38.8.102-1949	†Citric Acid	.25
Z38.8.103-1949	†Boric Acid, Crytsalline	.25
Z38.8.104-1949	†Hydrochloric Acid	.25
Z38.8.106-1949	†Acetic Acid, 28 Percent	.25

Developing Agents

		Price
PH4.135-1954	★†Mono-Benzyl-Para-Aminophenol Hydrochloride $C_6H_5CH_2NHC_6H_4OH \cdot HCl$ (N-Benzyl-p-Aminophenol Hydrochloride, p-Benzyl-Aminophenol Hydrochloride)	.25
Z38.8.125-1948	†Mono-Methyl-Para-Aminophenol Sulfate (Armol, Elon, Genol, Graphol, Metol, Photol, Pictol, Rhodol, Veritol)	.25

		Price
Z38.8.126-1949	†Hydroquinone (Para - Dihydroxybenzene, Quinol, Hydrochinone, Hydroquinol)	.25
Z38.8.127-1948	†2, 4-Diaminophenol Hydrochloride (Acrol, Amidol, Dianol, Dolmi)	.25
Z38.8.128-1949	†Para-Hydroxyphenylglycin (Athenon, Glycin, Iconyl, Monazol)	.25
Z38.8.129-1948	†Para-Aminophenol Hydrochloride (Kodelon, P.A.P.)	.25
Z38.8.130-1948	†Pyrogallic Acid (1,2,3-Trihydroxybenzene, Pyro, Pyrogallol)	.25
Z38.8.131-1948	†Catechol (Ortho-Dihydroxybenzene, Pyrocatechin, Pyrocatechol)	.25
Z38.8.132-1948	†Para-Phenylenediamine (1,4-Diaminobenzene)	.25
Z38.8.133-1948	†Para - Phenylenediamine Dihydrochloride (1,4-Diaminobenzene Dihydrochloride)	.25
Z38.8.134-1948	†Chlorhydroquinone (2 - Chlor - 1,4 - Dihydroxybenzene, Adurol, C.H.Q.)	.25

Hardeners

Z38.8.150-1949	†Aluminum Potassium Sulfate, Crystalline	.25
Z38.8.151-[illegible]	†Chromium Potassium Sulfate, Crystalline	.25
Z38.8.152-1949	†Formaldehyde Solution	.25
Z38.8.153-1949	†Paraformaldehyde	.25

Miscellaneous

PH4.178-1954	★†Isopropylamine, 50-Percent Aqueous Solution $(CH_3)_2CHNH_2$ (Monoisopropylamine)	.25
PH4.181-1954	★†Benzl Alcohol $C_6H_5CH_2OH$	.25
PH4.183-1953	†Photographic Grade Ammonium Chloride, Specification for (NH_4Cl)	.25
PH4.184-1953	†Photographic Grade Ammonium Sulfate, Specification for $[(NH_4)_2SO_4]$	.25
Z38.8.175-1949	†Sodium Sulfate, Anhydrous	.25
Z38.8.176-1949	†Sodium Acetate, Anhydrous	.25
Z38.8.177-1949	†Potassium Dichromate	.25
Z38.8.178-1949	†Potassium Permanganate	.25
Z38.8.179-1949	†Potassium Ferricyanide	.25
Z38.8.180-1949	†Copper Sulfate	.25
Z38.8.181-1949	†Potassium Persulfate	.25
Z38.8.182-1949	†Sodium Sulfide, Fused	.25

Restrainers and Antifoggants

PH4.207-1954	★†Photographic Grade Sodium Bromide, Specification for	.25
Z38.8.200-1949	†Potassium Bromide	.25
Z38.8.201-1948	†Potassium Iodide	.25
Z38.8.202-1948	†Potassium Chloride	.25
Z38.8.203-1948	†Sodium Chloride	.25
Z38.8.204-1948	†Benzotriazole	.25
Z38.8.205-1948	†5-Methylbenzotriazole	.25
Z38.8.206-1948	†Nitrobenzimidazole	.25

Alkalies

PH4.227-1954	★†Sodium Carbonate, Monohydrate $Na_2CO_3 \cdot H_2O$ (Revision of Z38.8.227-1948)	.25
PH4.228-1954	★†Sodium Carbonate, Anhydrous Na_2CO_3 (Revision of Z38.8.228-1948)	.25
PH4.230-1954	★†Sodium Tetraborate, Decahydrate $Na_2B_4O_7 \cdot 10H_2O$ (Borax) (Revision of Z38.8.230-1948)	.25
PH4.231-1954	★†Sodium Metaborate, Octahydrate (Revision of Z38.8.231-1948)	.25
PH4.233-1954	★†Sodium Tetraborate, Pentahydrate	.25
Z38.8.225-1948	†Sodium Hydroxide	.25
Z38.8.226-1948	†Potassium Hydroxide	.25
Z38.8.229-1948	†Potassium Carbonate	.25

		Price
	Fixing Agents	
PH4.250-1953	†Sodium Thiosulfate, Anhydrous	.25
PH4.251-1953	†Sodium Thiosulfate, Crystalline	.25
PH4.252-1953	†Photographic Grade Ammonium Thiosulfate, 60 Percent Solution, $(NH_4)_2S_2O_3$, (Ammonium Hypo Solution), Specification for	.25
PH4.253-1953	†Photographic Grade Ammonium Thiosulfate, $(NH_4)_2S_2O_3$, (Ammonium Hypo), Specification for	.25
	Sulfites	
PH4.275-1952	†Photographic Grade Sodium Sulfite (Na_2SO_3), Specification for (Revision of Z38.8.275-1948)	.25
Z38.8.276-1949	†Sodium Bisulfite	.25
Z38.8.277-1948	†Potassium Metabisulfite	.25

●PH22 — Motion Pictures:

(Special price of series, with binder, $17.00; without binder, $15.00)

PH22.1-1953	†35mm Motion-Picture Film, Alternate Standards for Either Positive or Negative Raw Stock, Dimensions for	.25
PH22.2-1954	★†35mm Sound Motion-Picture Film Usage in Camera (Revision of Z22.2-1946)	.25
PH22.3-1954	★†35mm Sound Motion-Picture Film Usage in Projector (Revision of Z22.3-1946)	.25
PH22.5-1953	†16-Millimeter Film, Perforated Two Edges, Dimensions for (Revision of Z22.5-1947)	.25
PH22.11-1953	†16-Millimeter Motion-Picture Projection Reels	.35
PH22.12-1947	†16-Millimeter Film, Perforated One Edge, Dimensions for (Revision of Z22.12-1947)	.25
PH22.17-1954	★†Dimensions for 8mm Motion-Picture Film (Revision of Z22.17-1947)	.25
PH22.21-1953	†8-Millimeter Motion-Picture Film, Usage in Camera (Revision of Z22.21-1946)	.25
PH22.22-1953	†8mm Motion-Picture Film, Usage in Projector (Revision of Z22.22-1947)	.25
PH22.24-1952	†Splices for 16-Millimeter Motion-Picture Films for Projection (Revision of Z22.24-1941, Z22.25-1941, and Z52.20-1944)	.25
PH22.27-1947 R1953	†Transmission Density of Motion-Picture Films, Method of Determining (Reaffirmation of Z22.27-1947) (Sold only with Z38.2.5-1946)	.75
PH22.36-1954	★†Dimensions for 35mm Motion-Picture Positive Raw Stock (Revision of Z22.36-1947)	.25
PH22.37-1944 R1953	†Raw Stock Cores for 35-Millimeter Motion-Picture Film (Reaffirmation of Z22.37-1944)	.25
PH22.38-1952	†Raw Stock Cores for 16-Millimeter Motion-Picture Film (Revision of Z22.38-1944)	.25
PH22.39-1953	†Screen Brightness for 35mm Motion-Pictures (Revision of Z22.39-1944)	.25
PH22.43-1953	†16mm 3000-Cycle Flutter Test Film (Revision of Z22.43-1946)	.25
PH22.44-1953	†16mm Multifrequency Test Film (Revision of Z22.44-1946)	.25
PH22.46-1946 R1953	†16-Millimeter Positive Aperture Dimensions and Image Size for Positive Prints Made from 35-Millimeter Negatives (Reaffirmation of Z22.46-1946)	.25

		Price
PH22.47-1946 R1953	†Negative Aperture Dimensions and Image Size for 16-Millimeter Duplicate Negatives Made from 35-Millimeter Positive Prints (Reaffirmation of Z22.47-1946)	.25
PH22.49-1946	†Printer Aperture Dimensions for Contact Printing 16-Millimeter Reversal and Color Reversal Duplicate Prints (Reaffirmation of Z22.49-1946)	.25
PH22.50-1946 R1952	†Reel Spindles for 16-Millimeter Motion-Picture Projectors (Reaffirmation of Z22.50-1946)	.25
PH22.52-1954	★†Cross-Modulation Tests, 16mm Variable-Area Photographic Sound (Revision of Z22.52-1946)	.25
PH22.53-1953	†Method of Determining Resolving Power of 16mm Motion-Picture Projector Lenses (Revision of Z22.53-1946)	.25
PH22.58-1954	★†Aperture for 35mm Sound Motion-Picture Projectors (Revision of Z22.58-1947)	.25
PH22.59-1954	★†Aperture for 35mm Sound Motion-Picture Cameras (Revision of Z.22.59-1947)	.25
PH22.60-1948 R1953	†Theatre Sound Test Film for 35-Millimeter Motion-Picture Sound Reproducing Systems (Reaffirmation of Z22.60-1948)	.25
PH22.62-1948 R1953	†Sound Focusing Test Film for 35-Millimeter Motion-Picture Sound Reproducers (Laboratory Type) (Reaffirmation of Z22.62-1948)	.25
PH22.65-1948 R1953	†Scanning-Beam Uniformity Test Film for 35-Millimeter Motion-Picture Sound Reproducers (Service Type) (Reaffirmation of Z22.65-1948)	.25
PH22.66-1948 R1953	†Scanning-Beam Uniformity Test Film for 35-Millimeter Motion-Picture Sound Reproducers (Laboratory Type) (Reaffirmation of Z22.66-1948)	.25
PH22.67-1948 R1953	†1000-Cycle Balancing Test Film for 35-Millimeter Motion-Picture Sound Reproducers (Reaffirmation of Z22.67-1948)	.25
PH22.69-1948 R1953	†Sound Records and Scanning Area of Double Width Push-Pull Sound Prints (Normal Centerline Type) (Reaffirmation of Z22.69-1948)	.25
PH22.70-1948 R1953	†Sound Records and Scanning Area of Double Width Push-Pull Sound Prints (Offset Centerline Type) (Reaffirmation of Z22.70-1948)	.25
PH22.73-1951	†32-Millimeter on 35-Millimeter Motion-Picture Negative Raw Stock, Cutting and Perforating Dimensions for	.25
PH22.74-1951	†Zero Point for Focusing Scales on 16-Millimeter and 8-Millimeter Motion-Picture Cameras	.25
PH22.75-1953	†A and B Windings of 16-Millimeter Film Perforated One Edge	.25
PH22.76-1951	†Mounting Threads and Flange Focal Distances for Lenses on 16-Millimeter and 8-Millimeter Motion-Picture Cameras	.25
PH22.77-1952	†Splices for 8-Millimeter Motion-Picture Films	.25
PH22.82-1951	†Sound Transmission of Perforated Projection Screens	.25
PH22.83-1952	†Edge-Numbering 16-Millimeter Motion-Picture Film	.25
PH22.84-1953	†Projection Lamps, Medium Prefocus Ring Double-Contact Base-Up Type for 16mm and 8mm Motion-Picture Projectors, Dimensions for	.25
PH22.85-1953	†Projection Lamps, Medium Prefocus Base-Down Type for 16mm and 8mm Motion-Picture Projectors, Dimensions for	.25
PH22.86-1953	†Dimensions for 200-Mil Magnetic Sound Tracks on 35mm and 17½mm Motion-Picture Film	.25
PH22.87-1953	†Dimensions for 100-Mil Magnetic Coating on Single-Perforated 16mm Motion-Picture Film	.25
PH22.90-1953	†Motion Picture Lenses, Aperture Calibration of	.50
PH22.92-1953	†Enlargement Ratio for 16mm to 35mm Optical Printing	.25
PH22.93-1953	†Dimensions for 35mm Motion-Picture Short-Pitch Negative Film	.25
PH22.94-1954	★†Slides and Opaques for Television Film Camera Chains (Supplement to Z38.7.19-1950)	.50
PH22.95-1954	★†Television Picture Area—35mm Motion-Picture Film	.25
PH22.96-1954	★†Television Picture Area—16mm Motion-Picture Film	.25

●Motion Pictures *(Continued)*

These Z22 numbers will be changed to PH22 as the standards are revised or reaffirmed.

Z22.4-1941	†35mm Film; Projector Reels	.25
Z22.7-1950	†Picture Aperture of 16-Millimeter Motion-Picture Cameras, Location and Size of	.35
Z22.8-1950	†Picture Aperture of 16-Millimeter Motion-Picture Projectors, Location and Size of	.35
Z22.9-1946	†Emulsion Position in Camera for 16-Millimeter Silent Motion-Picture Film	.25
Z22.10-1947	†Emulsion Position in Projector for Direct Front Projection of 16-Millimeter Silent Motion-Picture Film	.25
Z22.15-1946	†Emulsion and Sound Record Positions in Camera for 16-Millimeter Sound Motion Picture Film	.25
Z22.16-1947	†Emulsion and Sound Record Positions in Projector for Direct Front Projection of 16-Millimeter Sound Motion Picture Film	.25
Z22.19-1950	†Picture Aperture of 8-Millimeter Motion Picture Cameras, Location and Size of	.25
Z22.20-1950	†Picture Aperture of 8-Millimeter Motion Picture Projectors, Location and Size of	.25
Z22.23-1941	†8-mm Silent Film; Projection Reels	.25
Z22.28-1946	†Projection Rooms and Lenses for Motion Picture Theatres, Dimensions for	.25
Z22.29-1948	†Theater Projection Screens, Dimensions for	.25
Z22.31-1946	†Motion Picture Safety Film, Definition for (Sold only with Z38.3.1-1943)	.50
Z22.34-1949	†35-Millimeter Motion Picture Negative Raw Stock, Cutting and Perforating Dimensions for	.25
Z22.35-1947	†16-Tooth 35-Millimeter Motion Picture Projector Sprockets, Dimensions for	.25
Z22.40-1950	†Sound Records and Scanning Area of 35-Millimeter Sound Motion Picture Prints	.25
Z22.41-1946	†Sound Records and Scanning Area of 16-Millimeter Sound Motion Picture Prints	.25
Z22.42-1946	†Sound-Focusing Test Films for 16-Millimeter Sound Motion Picture Projection Equipment, Specifications for	.25

		Price
Z22.45-1946	†400-Cycle Signal Level Test Film for 16-Millimeter Sound Motion Picture Projection Equipment, Specifications for	.25
Z22.48-1946	†Printer Aperture Dimensions for Contact Printing 16-Millimeter Positive Prints from 16-Millimeter Negatives	.25
Z22.51-1946	†Intermodulation Tests on Variable-Density 16-Millimeter Sound Motion Picture Prints, Method of Making	.25
Z22.54-1946	†Freedom from Travel Ghost in 16-Millimeter Sound Motion Picture Projectors, Method of Determining	*Withdrawn*
Z22.55-1947	†35-Millimeter Sound Motion Picture Release Prints in Standard 2000-Foot Lengths, Specifications for	.35
Z22.56-1947	†Nomenclature for Motion Picture Film Used in Studios and Processing Laboratories (19½- x 28½-inch reproduction of chart on pages 8 and 9 sold separately....30¢)	.50
Z22.57-1947	†Buzz-Track Test Film for 16-Millimeter Motion Picture Sound Reproducers	.25
Z22.61-1949	†Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers (Service Type)	.25
Z22.68-1949	†Buzz-Track Test Film for 35-Millimeter Motion Picture Sound Reproducers	.25
Z22.71-1950	†32-Millimeter Sound Motion Picture Negative and Positive Raw Stock, Cutting and Perforating Dimensions for	.25
Z22.72-1950	†32-Millimeter Silent Motion Picture Negative and Positive Raw Stock, Cutting and Perforating Dimensions for	.25
Z22.78-1950	†Mounting Frames for Theater Projection Screens, Dimensions for	.25
Z22.79-1950	†16-Millimeter Sound Projector Test Film	.25
Z22.80-1950	†Scanning-Beam Uniformity Test Film for 16-Millimeter Motion Picture Sound Reproducers (Laboratory Type)	.25
Z22.81-1950	†Scanning-Beam Uniformity Test Film for 16-Millimeter Motion Picture Sound Reproducers (Service Type)	.25

X — Office Equipment and Supplies

X2.1.1-1951	†Desks and Tables for General Office Use, Dimensions of	.25
X2.1.2-1952	†Installation of Telephone Equipment on Desks, Provisions for	.25
X2.1.3-1954	★†Reflectances of Furniture for General Office Use	*In press*
X2.1.4-1954	★†Posture Chair, Definition of	*In press*
X2.4.1-1951	†Index Cards and Record-Keeping Cards, Size Designation for	.25
X2.4.2-1954	★†Non-Carbonized, Single-Fly, Adding Machine Paper Rolls, Specifications for	*In press*
X2.5.16-1954	★†Operating Voltage Range of Office Dictating Equipment	*In press*
X2.5.17-1954	★†Maximum Electrical Leakage of Dictating Machines	*In press*
X2.5.18-1954	★†Template and Method of Attaching Dictating Machine Secretarial Hand Controls to Typewriters	*In press*
X2.5.19-1954	★†Cables for Office Dictation Machines, Length of	*In press*

Y — Drawings, Symbols, and Abbreviations (Formerly Z)

Y is the new letter assigned to standards for abbreviations, charts and graphs, drawings, graphical symbols, and letter symbols. Standards previously approved are lettered "Z."

●Y1 — Abbreviations:

The following standards will be numbered Y1 when they are revised.

Z10.1-1941	Abbreviations for Scientific and Engineering Terms	.50
Z32.13-1950	†Abbreviations for Use on Drawings	1.25

●Y10 — Letter Symbols: *(see also B6.5 and Z7.1)*

Y10.7-1954	★Letter Symbols for Aeronautical Sciences (Revision of Z10.7-1950)	1.25
Y10.9-1953	Letter Symbols for Radio	1.00
Y10.10-1953	Meteorology, Letter Symbols for	1.00
Y10.11-1953	Letter Symbols for Acoustics	1.00

●Letter Symbols *(Continued)*:

These Z10 numbers will be changed to Y10 as the standards are revised or reaffirmed.

Z10f-1928	Mathematical Symbols	.40
Z10.2-1942	Letter Symbols for Hydraulics	.50
Z10.3-1948 R1953	Letter Symbols for Mechanics of Solid Bodies	.50
Z10.4-1943	Letter Symbols for Heat and Thermodynamics, Including Heat Flow	.65
Z10.5-1949	Letter Symbols for Electrical Quantities	.60
Z10.6-1948	Letter Symbols for Physics	1.00
Z10.8-1949	Letter Symbols for Structural Analysis	.50
Z10.12-1946	Letter Symbols for Chemical Engineering	.50

●Y14 — Drawings and Drafting Room Practice:

The number of this standard will be changed to Y14 when it is revised.

Z14.1-1946	Drawings and Drafting Room Practice	1.50

●Y15 — Charts and Graphs:

The following numbers will be changed to Y15 when the standards are revised or reaffirmed.

Z15.1-1932 R1947	Engineering and Scientific Charts for Lantern Slides	.60
Z15.2-1938 R1947	Time-Series Charts, Manual of Design and Construction	1.50
Z15.3-1943 R1947	Engineering and Scientific Graphs for Publications	.90

●Y32 — Graphical Symbols:

Y32.1.1-1951	Single (One) Line Electrical Engineering Diagrams, Graphical Symbols for	*Withdrawn*
Y32.2-1954	★Graphical Symbols for Electrical Diagrams (Revision of Y32.1-1951, Z32.3-1946, Z32.5-1944, Z32.10-1948, Z32.12-1947)	1.25
Y32.9-1943	Architectural Plans, Graphical Electrical Symbols for (Redesignation of Z32.9-1943)	.40

●Graphical Symbols *(Continued)*:

As these standards are revised or reaffirmed they will be assigned Y32 numbers.

Z10g5-1933	Graphical Symbols Used for Electric Traction including Railway Signaling (AIEE 17g5-1934)	*Out of print*
Z32.2.1-1949 R1953	Welding, Graphical Symbols for	.50
Z32.2.2-1949	Plumbing, Graphical Symbols for	.50
Z32.2.3-1949	Pipe Fittings, Valves, and Piping, Graphical Symbols for	.50

		Price
●Graphical Symbols *(Continued)*		
Z32.2.4-1949 R1953	Heating, Ventilating, and Air Conditioning, Graphical Symbols for	.50
Z32.2.5-1950	Railroad Use, Graphical Symbols for	.75
Z32.2.6-1950	Heat-Power Apparatus, Graphical Symbols for	.50
Z32.3-1946	†Electric Power and Control, Graphical Symbols for *Withdrawn*	
Z32.5-1944	†Telephone, Telegraph, and Radio Use, Graphical Symbols for *Withdrawn*	
Z32.10-1948	Electron Devices, Graphical Symbols for *Withdrawn*	
Z32.12-1947	Electric Apparatus, Basic Graphical Symbols for *Withdrawn*	
Z — Miscellaneous		
Z1.1-1941	†Guide for Quality Control	1.00
Z1.2-1941	†Control Chart Method of Analyzing Data (American War Standards)	
Z1.3-1942	†Control Chart Method of Controlling Quality During Production (American War Standard)	1.00
Z2-1938	Protection of Heads, Eyes, and Respiratory Organs, Safety Code for (NBS Handbook H24) *Under revision—Out of print*	
Z4.1-1935	†Industrial Sanitation in Manufacturing Establishments, Safety Code for *Under revision—Out of print*	
Z4.2-1942	†Drinking Fountains, Specifications for	.25
Z4.3-1935	Sanitary Privy (Supplement No. 108 to the Public Health Report) *Under revision—Out of print*	
Z7.1-1942	Illuminating Engineering Nomenclature and Photometric Standards	.50
Z8-1941	†Laundry Machinery and Operations, Safety Code for	.35
Z9	†Fundamentals Relating to the Design and Operation of Exhaust Systems (Report published for comment) *Under revision—Out of print*	
Z9.1-1951	†Ventilation and Safe Operation of Open-Surface Tanks	.75
Z10 — See Y1, Y10, and Y32 series above and on page 38		
●Z11 — Petroleum Products: *(Special price of series, $20.00)*		
Z11.2-1953	Viscosity by means of Saybolt Viscosimeter, Method of Test for (ASTM D88-53; API 518-53; AASHO T72-53)	.30
Z11.3-1952	Cone Penetration of Lubricating Grease, Test for (ASTM D217-52T)	.30
Z11.4-1942 R1947	Melting Point of Paraffin Wax, Method of Test for (ASTM D87-42; API 513-42)	.30
Z11.5-1948	Cloud and Pour Points, Method of Test for (ASTM D97-47; API 506-47)	.30
Z11.6-1952	Flash and Fire Points by Means of Open Cup, Method of Test for (ASTM D92-52; AASHO T48-52)	.30
Z11.7-1952	Flash Point by Means of the Pensky-Martens Closed Tester, Method of Test for (ASTM D93-52; AASHO T73-52)	.30
Z11.9-1947	Water in Petroleum Products and Other Bituminous Materials, Method of Test for (ASTM D95-46; API 519-46; AASHO T55-46)	.30
Z11.10-1953	Distillation of Gasoline, Naphtha, Kerosine, and Similar Petroleum Products, Method of Test for (ASTM D86-53; AASHO T115-53)	.30
Z11.11-1953	Distillation of Natural Gasoline, Method of Test for (ASTM D216-53)	.30
Z11.13-1952	Sulphur in Petroleum Products by the Bomb Method, Method of Test for (ASTM D129-52)	.30
Z11.14-1950	Thermal Value of Fuel Oil, Method of Test for (ASTM D240-50; API 517-50)	.30
Z11.16-1948	Analysis of Grease, Methods of (ASTM D128-47; API 501-47)	.30
Z11.17-1949	Burning Quality of Kerosine, Method of Test for (ASTM D187-49)	.30
Z11.18-1930 R1947	Burning Quality of Mineral Seal Oil, Method of Test for (ASTM D239-30; API 504-30)	.30
Z11.19-1936 R1947	Burning Quality of Long-Time Burning Oil for Railway Use, Method of Test for (ASTM D219-36; API 503-36)	.30
Z11.20-1952	Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for (ASTM D94-52T)	.30
Z11.21-1930 R1947	Detection of Free Sulfur and Corrosive Sulfur Compounds in Gasoline, Method of Test for (ASTM D130-30; API 521-30) *Under revision*	
Z11.22-1949	Melting Point of Petrolatum and Microcrystalline Wax, Method of Test for (ASTM D127-49)	.30
Z11.23-1932 R1947	Autogenous Ignition Temperatures of Petroleum Products, Method of Test for (ASTM D286-30; API 522-30)	.30
Z11.24-1952	Flash Point by Means of the Tag Closed Tester, Method of Test for (ASTM D56-52)	.30
Z11.25-1952	Carbon Residue of Petroleum Products (Conradson Carbon Residue), Method of Test for (ASTM D189-52)	.30
Z11.26-1953	Distillation of Gas Oil and Similar Distillate Fuel Oils, Method of Test for (ASTM D158-53)	.30
Z11.28-1953	Terms Relating to Petroleum, Definitions of (ASTM D288-53)	.30
Z11.29-1935 R1947	Dilution of Crankcase Oils, Method of Test for (ASTM D322-35; API 524-35)	.30
Z11.30-1952	Precipitation Number of Lubricating Oils, Method of Test for (ASTM D91-52)	.30
Z11.31-1952	Gravity of Petroleum and Petroleum Products by Means of the Hydrometer, Method of Test for (ASTM D287-52)	.30
Z11.32-1952	Distillation of Crude Petroleum, Method of Test for (ASTM D285-52)	.30
Z11.33-1935	Sampling Petroleum and Petroleum Products, Methods of (ASTM D270-33; API 528-33) *Under revision*	
Z11.35-1953	Color of Refined Petroleum Oil by Means of Saybolt Chromometer, Method of Test for (ASTM D156-53T)	.30
Z11.36-1953	Existent Gum in Gasoline (Air-Jet Evaporation), Method of Test for (ASTM D381-52T; API 529-52) *Under revision*	
Z11.37-1953	Knock Characteristics of Motor Fuels by the Motor Method, Test for (ASTM D357-53)	.30
Z11.39-1943 R1947	Viscosity-Temperature Charts for Liquid Petroleum Products (ASTM D341-43; API 533-43) (Charts A, B, C, D, and E)	1.25
Z11.41-1952	Unsulfonated Residue of Plant Spray Oils, Method of Test for (ASTM D483-52T)	.30

		Price
Z11.42-1952	Stoddard Solvent, Specifications for (ASTM D484-52)	.30
Z11.43-1952	Distillation of Plant Spray Oils, Method of Test for (ASTM D447-52T)	.30
Z11.44-1952	Vapor Pressure of Petroleum Products (Reid Method), Method of Test for (ASTM D323-52)	.30
Z11.45-1953	Calculating Viscosity Index, Method for ASTM D567-53; API 540-53)	.30
Z11.46-1953	Conversion of Kinematic Viscosity to Saybolt Universal Viscosity, Method for (ASTM D446-53; API 534-53)	.30
Z11.47-1952	Carbon Residue of Petroleum Products (Ramsbottom Carbon Residue), Method of Test for (ASTM D524-52T)	.30
Z11.48-1953	Tetraethyl Lead in Gasoline, Method of Test for (ASTM D526-53T)	.30
Z11.49-1945 R1949	Carbonizable Substance in White Mineral Oil (Liquid Petrolatum), Method of Test for (ASTM D565-45; API 545-45)	.30
Z11.50-1945 R1949	Carbonizable Substances in Paraffin Wax, Method of Test for (ASTM D612-45; API 544-45)	.30
Z11.51-1943 R1947	Dropping Point of Lubricating Grease, Method of Test for (ASTM D566-42; API 543-42)	.30
Z11.52-1953	Oil Content of Paraffin Wax, Test for (ASTM D721-53T)	.30
Z11.53-1953	Conversion of Kinematic Viscosity to Saybolt Furol Viscosity, Method for (ASTM D666-53; API 548-53)	.30
Z11.54-1947	Ash Content of Petroleum Oils, Method of Test for (ASTM D482-46; API 549-46)	.30
Z11.56-1949	Chemical Analysis for Metals in Lubricating Oils, Methods of (ASTM D811-48)..	.30
Z11.57-1949	Sulfated Residue, Lead, Iron, and Copper in New and Used Lubricating Oils, Methods of Test for (ASTM D810-48)..	.30
Z11.58-1949	Sediment in Fuel Oil by Extraction, Method of Test for (ASTM D473-48)	.30
Z11.59-1952	Neutralization Value (Acid and Base Numbers) by Electrometric Titration, Method of Test for (ASTM D664-52)	.30
Z11.60-1949	Oxidation Stability of Aviation Gasoline (Potential Gum Method), Method of Test for (ASTM D873-49)	.30
Z11.61-1949	Congealing Point of Pharmaceutical Petrolatums, Method of Test for (ASTM D938-49)	.30
Z11.62-1949	Measurements of Density of Hydrocarbon Liquids by the Pycnometer, Method for (ASTM D941-49)	.30
Z11.63-1949	Oxidation Stability of Gasoline (Induction Period Method), Method of Test for (ASTM D525-49)	.30
Z11.64-1950	Interfacial Tension of Oil Against Water by the Ring Method, Test for (ASTM D971-50)	.30
Z11.65-1950	Oxidation Stability of Lubricating Greases by the Oxygen Bomb Method, Test for (ASTM D942-50)	.30
Z11.66-1950	Determination of Butadiene Content of Polymerization Grade Butadiene (ASTM D973-50)	.30
Z11.67-1952	Saponification Number of Petroleum Products by Potentiometric Titration, Test for (ASTM D939-52)	.30
Z11.68-1951	Sulfated Residue from New Lubricating Oils, Test for (ASTM D874-51)	.30
Z11.69-1953	★Knock Characteristics of Motor Fuels by the Research Method, Test for (ASTM D908-51)	.30
Z11.70-1951	Benzene and Toluene by Ultraviolet Spectrophotometry, Test for (ASTM D1017-51)	.30
Z11.71-1951	Olefinic Plus Aromatic Hydrocarbons in Petroleum, Test for (ASTM D1019-51)	.30
Z11.72-1951	Apparent Viscosity of Lubricating Greases, Test for (ASTM D1092-51)	.30
Z11.73-1951	Sodium in Lubricating Oils and Lubricating Oil Additives, Test for (ASTM D1026-51)	30
Z11.74-1952	Acetylene in Polymerization Grade Butadiene by Silver Nitrate Method, Test for (ASTM D1020-52)	.30
Z11.75-1952	Separation of Residue from Butadiene, Test for (ASTM D1023-52)	.30
Z11.76-1952	Nonvolatile Residue of Polymerization Grade Butadiene, Test for (ASTM D1025-52)	.30
Z11.77-1952	Acidity of Residue from Distillation of Gasoline and of Petroleum Solvents, Test for (ASTM D1093-52)	.30
Z11.78-1953	Foaming Characteristics of Crankcase Oils, Test for (ASTM D892-46T)	.30
Z11.79-1953	Butadiene Dimer in Polymerization Grade Butadiene, Method of Test for (ASTM D1024-53)	.30
Z11.80-1953	Boiling Point Range of Polymerization Grade Butadiene, Method of Test for (ASTM D1088-53)	.30
Z11.81-1953	Carbonyl Content of Butadiene, Test for (ASTM D1089-53)	.30
Z11.82-1953	Water Tolerance for Aircraft Fuels, Method of Test for (ASTM D1094-53)	.30
Z11.83-1953	ASTM-IP Petroleum Measurement Tables (ASTM D1250-53)	8.25

●Z12 — Dust Explosions:

Bound volume, 289 pages, $3.00 (parts also sold separately)

Z12.1-1946	Pulverized-Coal Systems, Safety Code for the Installation and Operation of (NFPA 60A)	.35
Z12.2-1944	Starch Factories, Safety Code for the Prevention of Dust Explosions in (NFPA 61A)	.25
Z12.3-1953	Flour and Feed Mills, Safety Code for the Prevention of Dust Explosions in (NFPA 61C)	.35
Z12.4-1953	Terminal Grain Elevators, Safety Code for the Prevention of Dust Explosions in (NFPA 61B)	.35
Z12.5-1953	Woodworking Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 663)	.25
Z12.6-1953	Sugar and Cocoa, Safety Code for Pulverizing Systems for (NFPA 62)	.25
Z12.7-1953	Coal Pneumatic Cleaning Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 653)	.25
Z12.8-1946	Wood Flour Manufacturing Establishments, Safety Code for the Prevention of Dust Explosions in (NFPA 662)	.25
Z12.9-1953	Spice Grinding Plants, Safety Code for the Prevention of Dust Ignitions in (NFPA 656)	.25
Z12.10-1943	Inert Gas for Fire and Explosion Prevention, Safety Code for the Use of (NFPA 12A)	.25

		Price
Z12.11-1953	Aluminum Bronze Powder, Safety Code for the Frevention of Dust Explosions in the Manufacture of (NFPA 651)	.25
Z12.12-1950	Sulphur Dust Explosions and Fires, Safety Code for the Prevention of (NFPA 655)	.25
Z12.13-1953	Country Grain Elevators, Code for the Prevention of Dust Ignitions in (NFPA 64)	.25
Z12.14-1943	Grain Elevators and Storage Units, Suggested Good Practices for the Application of Suction and Venting for the Control of Dust in (NFPA 661)	.25
Z12.15-1953	Magnesium Powder or Dust, Code for Explosion and Fire Protection in Plants Producing or Handling (NFPA 652) ..	.25
Z12.16-1946	Plastics Industry, Safety Code for the Prevention of Dust Explosions in the (NFPA 654)	.35
Z12.17-1946	Pulverized Fuel Systems, Safety Code for the Installation of (NFPA 60)	.50
Z12.18-1953	Confectionery Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 657)	.25
Z14.1-1946	See Y14, page 38	
Z15 Series	See Y15, page 38	
Z16.1-1954	†Method of Recording and Measuring Work Injury Experience	.50
Z16.2-1941	†Compiling Industrial Accident Causes Part 1—Selection of Accident Factors Part 2—Detailed Classification of Accident Factors	1.25
Z17.1-1936 R1951	†Preferred Numbers	.50
Z20.3-1950	Places of Outdoor Assembly (Grandstands and Tents) (NFPA 102)	.25

●Z21 — Gas-Burning Appliances, Approval and Installation Requirements:

Z21.1-1952	Domestic Gas Ranges, Approval Requirements for, with Addenda Z21.1a-1953 and Z21.1b 1954 ..... (Z21.1a-1953 sold separately .....25¢; Z21.1b-1954 sold separately .....50¢)	2.75
Z21.2-1949 R1952	Gas Hose for Portable Gas Appliances, Listing Requirements on	1.00
Z21.3-1940	Hotel and Restaurant Ranges and Unit Broilers, Approval Requirements for, with Addenda Z21.3a-1946 ..... (Z21.3a-1946 sold separately.....40¢)	1.40
Z21.5-1953	Domestic Gas Clothes Dryers, Approval Requirements for, with Addenda Z21.5a-1954 ..... (★Z21.5a-1954 sold separately.....25¢)	2.25
Z21.6-1949 R1952	Domestic Gas-Fired Incinerators, Approval Requirements for, with Addenda Z21.6a-1953 and Z21.6b-1954 ..... (Z21.6a-1953 sold separately .....25¢; ★Z21.6b-1954 sold separately .....40¢)	2.15
Z21.8-1948 R1952	Installation of Domestic Gas Conversion Burners, Requirements for	1.00
Z21.9-1948 R1952	Hot Plates and Laundry Stoves, Approval Requirements for, with Addenda Z21.9a-1949 ..... (Z21.9a-1949 sold separately.....40¢)	1.40
Z21.10-1953	★Gas Water Heaters, Approval Requirements for, with Addenda Z21.10a-1954..... (★Z21.10a-1954 sold separately .....50¢)	2.50
Z21.11-1954	★Gas-Fired Room Heaters, Approval Requirements for, with Addenda Z21.11a-1950 and Z21.11b-1953	2.00
Z21.12-1937 R1953	Draft Hoods, Listing Requirements for..	.50
Z21.13	Central Heating Gas Appliances, Approval Requirements for	
Z21.13.1-1951	Steam and Hot Water Boilers, Volume I, with Addenda Z21.13.1a-1954 ..... (★Z21.13.1a-1954 sold separately 25¢)	2.25
Z21.13.2-1951	Gravity and Forced Air Central Furnaces, Volume II, with Addenda Z21.13.2a-1952 and Z21.13.2b-1954... (Z21.13.2a-1952 sold separately..50¢; ★Z21.13.2b-1954 sold separately 50¢)	3.00
Z21.13.3-1951	Gravity and Fan Type Floor Furnaces, Volume III, with Addenda Z21.13.3a-1954 ..... (★Z21.13.3a-1954 sold separately 25¢)	2.25
Z21.13.4-1953	Gravity and Fan Type Vented Recessed Heaters, Volume IV, with Addenda Z21.13.4a-1954 ..... (★Z21.13.4a-1954 sold separately 25¢)	2.25
Z21.15-1954	★Gas Valves, Listing Requirements for, with Addenda Z21.15a-1949	2.00
Z21.16-1951	Gas Unit Heaters, Approval Requirements for, with Addenda Z21.16a-1953..... (Z21.16a-1953 sold separately .....25¢)	1.75
Z21.17-1948 R1952	Domestic Gas Conversion Burners, Listing Requirements for	2.00
Z21.18-1934	Domestic Gas Appliance Pressure Regulators, Listing Requirements for.....	.75
Z21.19-1942 R1953	Refrigerators Using Gas Fuel, Approval Requirements for	1.00
Z21.20-1951	Automatic Pilots, Listing Requirements for	1.00
Z21.21-1952	Automatic Valves for Gas Appliances, Listing Requirements for	1.00
Z21.22-1935 R1953	Relief and Automatic Gas Shut-off Valves for Use on Water Heating Systems, Listing Requirements for	.40
Z21.23-1940 R1953	Gas Appliance Thermostats, Listing Requirements for	.50
Z21.24-1941 R1953	Semi-Rigid Gas Appliance Tubing and Fittings, Listing Requirements for	.50
Z21.26-1941 R1953	Attachable Gas Water Heating Units, Listing Requirements for *Under revision—Out of print*	
Z21.27-1940	Hotel and Restaurant Deep Fat Fryers, Approval Requirements for, with Addenda Z21.27a-1946 ..... (Z21.27a-1946 sold separately.....40¢)	1.40
Z21.28-1948	Portable Gas Baking and Roasting Ovens, Approval Requirements for, with Addenda Z21.28-1948 ..... (★Z21.28a-1954 sold separately....40¢)	2.40
Z21.29-1941 R1953	Furnace Temperature Limit Controls and Fan Controls, Listing Requirements for..	.50
Z21.30-1950	Installation of Gas Piping and Gas Appliances in Buildings (Not Applicable to Undiluted Liquefied Petroleum Gas) *In press*	
Z21.31-1941 R1947	Gas Counter Appliances, Approval Requirements for, with Addenda Z21.31a-1954 ..... (★Z21.31a-1954 sold separately ....50¢)	1.50
Z21.32-1942 R1953	Gas Appliance Connectors of Flexible Metal Tubing and Fittings, Listing Requirements for	.50

		Price
Z21.33-1950 R1953	Installation of Gas-Burning Equipment in Power Boilers, Requirements for	1.00
Z21.34-1942 R1950	Gas-Fired Duct Furnaces, Approval Requirements for, with Addenda Z21.34a-1954 ..... (★Z21.34a-1954 sold separately ....25¢)	1.25
Z21.35-1945 R1953	Gum Protective Devices, Listing Requirements for	.50
Z21.37-1948 R1952	Dual Oven Type Combination Gas Ranges, Approval Requirements for	1.00
Z21.38-1953	Installation of Gas Conversion Burners in Domestic Ranges, Requirements for ..	.25
Z21.39-1953	Gas Conversion Burners for Domestic Ranges, Listing Requirements for	2.00

●Z22 — Motion Pictures:

This number is being discontinued. Standards assigned Z22 numbers are listed under the new number, PH22.

Z23.1-1939 R1950	Sieves for Testing Purposes, Specifications for (ASTM E11-39; AASHO M92-42)..	.25

●Z24 — Acoustics, Vibration, and Mechanical Shock:

(Special price of series, $6.50)

Z24.1-1951	†Acoustical Terminology	1.50
Z24.1a	Shock and Vibration Terminology, Supplement to Z24.1-1951 (Proposed; distributed for trial and criticism)	.75
Z24.2-1942	†Noise Measurement ..... *Withdrawn*	
Z24.3-1944	†Sound Level Meters for Measurement of Noise and Other Sounds	.50
Z24.4-1949	†Pressure Calibration of Laboratory Standard Pressure Microphones, Method for the	.75
Z24.5-1951	†Audiometers for General Diagnostic Purposes	.50
Z24.7-1950	†Apparatus Noise Measurement, Test Code for	.50
Z24.8-1949	†Laboratory Standard Pressure Microphones, Specification for	.50
Z24.9-1949	†Coupler Calibration of Earphones, Method for the	.75
Z24.10-1953	†Octave-Band Filter Set for the Analysis of Noise and Other Sounds, Specification for an	.50
Z24.11-1954	★†Free-Field Secondary Calibration of Microphones, Method for the	.50
Z24.12-1952	†Pure-Tone Audiometers for Screening Purposes, Specification for	.50
Z24.13-1953	†Speech Audiometers, Specification for	.50
Z24.14-1953	†Measurement of Characteristics of Hearing Aids, Method for	.50

Z24-X2 The Relations of Hearing Loss to Noise Exposure $1.50

64 pp, 6 x 9 in.. 18 figures, 8 tables, heavy paper cover. This report by Exploratory Subcommittee Z24-X-2 of Sectional Committee Z24 on Acoustics, Vibration, and Mechanical Shock analyzes the noise problem. Representing one of the most comprehensive surveys ever made, it tells what factors enter into industrial loss of hearing; how much certain types of noise affect hearing; what allowance to make for recovery of hearing after noise exposure; what loss of hearing to expect of different age groups.

Z25.1-1940 R1947	†Rules for Rounding Off Numerical Values	.35

		Price
Z26.1-1950	†Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways, Safety Code for	1.00
Z30.2-1953	Thermal Analysis of Steel (ASTM E14-51T)	.30
Z31-1933	Marking of Gold Filled and Rolled Gold Plate Articles Other Than Watchcases (CS47-34) ..... *Out of print*	
Z32 Series	See Y32 on pages 38 and 39	
Z33.1-1950	Regulations for the Installation of Blower and Exhaust Systems for Dust, Stock and Vapor Removal (NFPA 91; NBFU 91)..	.25
Z34.1-1947	†Practice for Certification Procedures.....	.35
Z35.1-1941 R1945	†Industrial Accident Prevention Signs, Specifications for	.75

●Z37 — Allowable Concentrations of Toxic Dusts and Gases:

(Special price of series, $4.00)

Z37.1-1941	†Carbon Monoxide, Allowable Concentration of	.35
Z37.2-1941	†Hydrogen Sulfide, Allowable Concentration of	.35
Z37.3-1941	†Carbon Disulfide, Allowable Concentration of	.35
Z37.4-1941	†Benzene, Allowable Concentration of....	.35
Z37.6-1948	†Manganese, Allowable Concentration of..	.35
Z37.7-1943	†Chromic Acid and Chromates, Allowable Concentration of	.35
Z37.8-1943	†Mercury, Allowable Concentration of	.35
Z37.10-1948	†Xylene, Allowable Concentration of	.35
Z37.11-1943	†Lead and Certain of Its Inorganic Compounds, Allowable Concentration of....	.35
Z37.12-1943	†Toluene, Allowable Concentration of	.35
Z37.13-1944	†Oxides of Nitrogen, Allowable Concentration of	.35
Z37.14-1944	†Methanol, Allowable Concentration of ...	.35
Z37.16-1944	†Formaldehyde, Allowable Concentration of	.35
Z37.18-1949	†Methyl Chloride, Allowable Concentration of	.35
Z37.19-1946	†Trichloroethylene, Allowable Concentration of	.35

●Z38 — Photography (other than Cinematography):

This number is being discontinued. Standards assigned Z38 numbers are listed under the appropriate new numbers:— PH1, Films, Plates, and Paper; PH2, Photographic Sensitometry; PH3, Photographic Apparatus; PH4, Photographic Processing.

Z39.1-1943	†Reference Data and Arrangement of Periodicals	.25

●Z41 — Specifications for Protective Occupational Footwear (American War Standards):

Z41.1-1944	†Men's Safety-Toe Shoes	.75
Z41.3-1944	†Men's Conductive Shoes	
Z41.4-1944	†Men's Explosives - Operations (Non-sparking) Shoes	
Z41.5-1944	†Men's Electrical-Hazards Shoes	
Z41.6-1944	†Men's Foundry (Molders) Shoes	
Z41.2-1944	†Women's Safety-Toe (Oxford) Shoes	*Out of print*
Z41.7-1944	†Women's Safety-Toe (High) Shoes	
Z41.8-1944	†Women's Explosives - Operations (Non-sparking) Shoes	
Z41.9-1944	†Women's Conductive Shoes	

		Price
Z43-1941	†Grinding, Polishing and Buffing Equipment Sanitation	.75
Z48.1-1954	★Marking Portable Compressed Gas Containers to Identify the Material Contained, Method for	.15
Z49.1-1950	Electric and Gas Welding and Cutting Operations, Safety in	.50
Z50.1-1947	†Bakery Equipment, Safety Code for	1.00
Z53.1-1953	†Marking Physical Hazards and the Identification of Certain Equipment, Safety Color Code for	.50
Z54.1-1946	†Industrial Use of X-Rays, Safety Code for the (American War Standard)	1.50
Z55.1-1950	†Gray Finishes for Industrial Apparatus and Equipment	.35
	Color Chips representing Gray Finishes according to Z55.1-1950, set of 4	2.25
	(Each chip sold separately .....75¢)	

Z56 Nationally Recognized Standards in State Laws and Local Ordinances $1.00

44-page report of ASA Committee Z56 on Model Laws and Ordinances published by ASA to collect ideas and discussion on the question, "How can nationally recognized standards legally be used in state laws and local ordinances?" Points out how lack of uniformity in state and local technical requirements increases costs and reduces public safety; analyzes the need for legal methods to permit widespread use of nationally recognized standards to bring outmoded requirements up to date with new technical developments; summarizes the present status of the "adoption by reference" method; and discusses the method of making compliance with national standards *prima facie* evidence of compliance with the law.

Z57.1-1954	★Flutter Content of Sound Recorders and Reproducers, Method for Determining	.75
Z58.1.1-1953	Nomenclature for Radiometry and Photometry	.25
Z58.1.2-1952	†Colorimetry, Nomenclature and Definitions in the Field of	.50
Z58.7.1-1951	†Spectrophotometric Measurement for Color, Method of	.75
Z58.7.2-1951	†Determination of Color Specifications, Method for	
Z58.7.3-1951	†Expressing Color Specifications, Alternative Methods for	
Z60.1-1952	Nursery Stock — Horticultural Standards (AAN)	.50
Z61.1-1949	†Home Cooking and Baking Utensils, Dimensions, Tolerances, and Terminology for	.35

Z63 A Glossary of Terms in Nuclear Science and Technology (Proposed American Standard; published for trial and criticism) Complete, in binder, $7.00

This Glossary consists of the following nine sections. Each lists terms peculiar to its field, those used in the field with a different sense or with different emphasis from that most commonly understood in other connections, and those used elsewhere in the same way but so infrequently as to be unfamiliar. Each section also includes an alphabetical listing of the terms included in all the sections. Sections VIII and IX are published under one cover. All others are available separately.

I	General Terms	$2.50
II	Reactor Theory	$1.50
III	Reactor Engineering	$ .75
IV	Chemistry	$ .60
V	Chemical Engineering	$ .60
VI	Biophysics and Radiobiology	$ .60
VII	Instrumentation	$1.00
VIII	Isotopes Separation	$1.20
IX	Metallurgy	

		Price
Z67.1-1953	Gross Calorific Value and Net Calorific Value of Solid and Liquid Fuels, Definitions of the Terms (ASTM D407-44)	.25
Z68.1-1953	Calorific Value of Gaseous Fuels by Water Flow Calorimeter, Method of Test for (ASTM D900-48)	*In press*
Z69.1-1953	Specific Gravity of Gaseous Fuels, Methods of Test for (ASTM D1070-52)	.40
Z71.1-1954	Thermometers, Specifications for (ASTM E1-53)	.75

CS — Commercial Standards

The following Commercial Standards, promulgated by the National Bureau of Standards, have been approved by ASA:

CS8-41	Gage Blanks (American Standard B47.1-1941)	*Under revision*
CS19-32	Foundry Patterns of Wood (American Standard B45.1-1932)	*Out of print*
CS47-34	Marking of Gold Filled and Rolled Gold Plate Articles Other Than Watchcases (American Standard Z31-1933)	*Out of print*
CS49-34	Chip Board, Laminated Chip Board, and Miscellaneous Boards for Bookbinding Purposes	*Out of print*
CS50-34	Binders Board	.05
CS51-35	Marking Articles Made of Silver in Combination with Gold	.05
CS53-35	Colors and Finishes for Cast Stone	.05
CS54-35	Mattresses for Hospitals	*Out of print*
CS55-35	Mattresses for Institutions	*Out of print*
CS57-40	Book Cloths, Buckrams, and Impregnated Fabrics for Bookbinding Purposes except Library Bindings	*Out of print*
CS67-38	Marking Articles Made of Karat Gold	*Out of print*
CS99-42	Gas Floor Furnaces (Gravity Circulating Type)	*Withdrawn*

American Safety Standards

(Special Price of Complete Set, $50.00)

(These standards are also included in the preceding general list)

		Price
A2.1-1942	Fire Tests of Building Construction and Materials, Methods of (ASTM E119-41)	*Under revision*
A2.2-1942	Fire Tests of Door Assemblies, Methods of (ASTM E152-41)	.30
A9.1-1953	Building Exits Code (NFPA 101; AIA 40-B-7)	1.00
A10.1-1951	Manual of Accident Prevention in Construction	3.00
A10.2-1944	†Building Construction, Safety Code for	1.75
A11.1-1952	Industrial Lighting	.50
A12-1932	†Floor and Wall Openings, Railings, and Toe Boards, Safety Code for	.50
A13-1928	Identification of Piping Systems, Scheme for the	.60
A14.1-1952	†Portable Wood Ladders, Safety Code for	.75
A17.1-1937	Elevators, Dumbwaiters, and Escalators, Safety Code for, with Supplement A17.3-1942	1.50
A17.1.5-1953	Private Residence Elevators, Safety Code for	1.00
A17.2-1945	Elevators, Inspection of (Inspectors' Manual)	1.50
A23.1-1948	School Lighting (AIA 31-F-28)	.50
A39-1933	†Window Cleaning *Under revision—Out of print*	
A85-1942	†Protective Lighting for Industrial Properties (American War Standard)... *Out of print*	
A90.1-1949	Manlifts, Safety Code for	.55
B7.1-1947	Use, Care, and Protection of Abrasive Wheels, Safety Code for	.75
B8-1932	†Protection of Industrial Workers in Foundries, Safety Code for	.35
B9.1-1953	Mechanical Refrigeration, Safety Code for (ASRE Circular 15-R)	1.00
B11.1-1948	†Power Presses and Foot and Hand Presses, Safety Code for	1.25
B13-1924	Logging and Sawmill Safety Code (NBS Handbook H5) ..... *Out of print*	
B15.1-1953	Mechanical Power-Transmission Apparatus, Safety Code for	1.00
B19-1938	Compressed Air Machinery and Equipment, Safety Code for	*Under revision—Out of print*
B20.1-1947	Conveyors, Cableways, and Related Equipment, Safety Code for	.90
B24.1-1952	†Forging and Hot Metal Stamping, Safety Code for	1.00
B28.1-1949	†Mills and Calenders in the Rubber Industry, Safety Code for	1.00
B30.1-1943 R1952	Jacks, Safety Code for	.50
B30.2-1943 R1952	Cranes, Derricks, and Hoists, Safety Code for	1.80
B31.1-1951	Code for Pressure Piping, including Supplement B31.1a-1953, and B31.1.8-1952, Gas Transmission and Distribution Piping Systems (Section 8) (B31.1a-1953 also sold separately $1.00) (B31.1.8-1952 also sold separately $1.25)	5.25
B56.1-1950	Industrial Power Trucks, Safety Code for	.85
B65.1-1954	★†Controls and Signaling Devices for Graphic Arts Presses, Safety Code for	.50
C1-1951	National Electrical Code (NBFU 70; Pocket edition) (Paper bound NFPA 70; 4¾ x 7¼ in. ....$1.00) (Cloth bound NFPA 70; 6 x 9 in., 576 pages....$3.00)	.10

		Price
●C2 — National Electrical Safety Code (NBS Handbook H30):		
C2.1-1941 R1947	Installation and Maintenance of Electrical Supply Stations, Safety Rules for the (NBS Handbook H31) (Also sold separately 10¢)	1.75
C2.2-1941 R1947	Installation and Maintenance of Electric Supply and Communication Lines, Safety Rules for the (NBS Handbook H32) (Not sold separately)	
C2.3-1941 R1947	Installation and Maintenance of Electric Utilization Equipment, Safety Rules for the (NBS Handbook H33) (Not sold separately)	
C2.4-1939 R1947	Operation of Electric Equipment and Lines, Safety Rules for the (NBS Handbook H34) (Also sold separately.....20¢)	
C2.5-1940 R1947	Radio Installations, Safety Rules for (NBS Handbook H35) (Also sold separately 15¢)	
●C5 — Protection against Lightning, Code for (NBS Handbook H46; NFPA 78):		
C5.1-1953	Part I, Protection of Persons	.40
C5.2-1953	Part II, Protection of Buildings and Miscellaneous Property	
C5.3-1953	Part III, Protection of Structures Containing Flammable Liquids and Gases	
C74-1942	†Machine Tool Electrical Standards (American War Standard) ..... *Out of print*	
D6.1-1948	Uniform Traffic Control Devices for Streets and Highways, Manual on *Out of print*	
D7.1-1941	†Inspection Requirements for Motor Vehicles	*Under revision—Out of print*
D8.1-1951	Railroad Highway Grade Crossing Protection (AAR Bulletin 3)	.50
D10.1-1951	Adjustable Face Traffic Control Signal Head Standards (ITE Technical Report 1)	.50
D11.1-1943	Pre-Timed, Fixed Cycle, Traffic Signal Controllers (ITE Technical Report 2)...	.50
D12.1-1953	Street and Highway Lighting	.50
D13.1-1950	Traffic-Actuated, Traffic Signal Controllers and Detectors, Specifications for	.50
●J6 — Specifications for Rubber Protective Equipment for Electrical Workers:		
J6.1-1950	Rubber Insulating Line Hose (ASTM D1050-49T)	.60
J6.2-1950	Rubber Insulator Hoods (ASTM D1049-49T)	
J6.4-1950	Rubber Insulating Blankets (ASTM D1048-49T)	
J6.5-1950	Rubber Insulating Sleeves (ASTM D1051-49T)	
J6.3-1945	†Leather Protective Gloves (American War Standard)	.25
J6.6-1952	Rubber Insulating Gloves, Specifications for (ASTM D120-52T)	.30
K13.1-1950	†Identification of Gas-Mask Canisters, Safety Code for	.35
L1.1-1947	†Textile Safety Code	.50

		Price
●L18 — Specifications for Protective Occupational (Safety) Clothing (American War Standards):		
L18.1-1944	†Leather Aprons	.50
L18.2-1944	†Cape Sleeves and Bibs	
L18.3-1944	†Knee-Length Leggings	
L18.4-1944	†Leather Coats	.50
L18.5-1944	†Leather Overalls	
L18.6-1944	†Leather Sleeves	
L18.7-1944	†Welders' Leather Gauntlet Gloves	.50
L18.8-1944	†Protective Leather Gloves, Steel-Stapled	
L18.9-1944	†Asbestos Gloves	
L18.10-1944	†Asbestos Gloves, Leather Reinforced	
L18.11-1944	†Asbestos Mittens	
L18.12-1944	†Asbestos Mittens, Leather Reinforced	
L18.14-1944	†Asbestos Aprons (Bib Type)	.50
L18.15-1944	†Asbestos Cape Sleeves and Bibs	
L18.16-1944	†Asbestos Leggings (Knee and Hip Length)	
L18.17-1944	†Asbestos Coats	
L18.18-1945	†Leather One-Finger Mittens	.50
L18.19-1945	†Leather Mittens	
L18.20-1945	†Asbestos One-Finger Mittens	
L18.21-1945	†Flame-Resistant Fabric Aprons (Bib Type)	.50
L18.22-1945	†Flame-Resistant Fabric Leggings (Knee and Hip Length)	
L18.23-1945	†Flame-Resistant Fabric Coats	
L18.24-1945	†Flame-Resistant Fabric Pants	
L18.25-1945	†Flame-Resistant Fabric Coveralls	
L18.26-1945	†Flame-Resistant Fabric Spats	.50
L18.27-1945	†Leather Spats	
L18.28-1945	†Asbestos Spats	
L18.29-1945	†Chemical-Resistant Gloves	.35
M2.1-1951	Installing and Using Electrical Equipment in Coal Mines, Safety Rules for (BMTP 402)	.20
M11-1927	Wire Rope for Mines	*Under revision—Out of print*
M12.1-1946	†Construction and Maintenance of Ladders and Stairs for Mines	.35
M13-1925 R1942	†Rock-Dusting Coal Mines to Prevent Coal Dust Explosions	.25
M14-1930	†Explosives in Bituminous Coal Mines, Use of	.35
M15-1931	†Coal Mine Transportation, Safety Code for	.35
M17-1930	†Fire Fighting Equipment in Metal Mines	*Gratis*
M24-1932	†Installing and Using Electrical Equipment in Metal Mines, Safety Rules for	*Gratis*
O1.1-1954	★†Woodworking Machinery, Safety Code for	1.00
P1-1936	†Paper and Pulp Mills, Safety Code for	*Under revision—Out of print*
Z2-1938	Protection of Heads, Eyes, and Respiratory Organs, Safety Code for (NBS Handbook H24)	*Under revision—Out of print*
Z4.1-1935	†Industrial Sanitation in Manufacturing Establishments, Safety Code for	*Under revision—Out of print*
Z4.2-1942	†Drinking Fountains, Specifications for	.25
Z4.3-1935	Sanitary Privy (Supplement 108 to the Public Health Reports)	*Under revision—Out of print*
Z8-1941	†Laundry Machinery and Operations, Safety Code for	.35
Z9	†Fundamentals Relating to the Design and Operation of Exhaust Systems (Report published for comment)	*Under revision—Out of print*
Z9.1-1951	†Ventilation and Safe Operation of Open-Surface Tanks	.75

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●Z12 — Dust Explosions:		
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Z12.2-1944	Starch Factories, Safety Code for the Prevention of Dust Explosions in (NFPA 61A)	.25
Z12.3-1953	Flour and Feed Mills, Safety Code for the Prevention of Dust Explosions in (NFPA 61C)	.35
Z12.4-1953	Terminal Grain Elevators, Safety Code for the Prevention of Dust Explosions in (NFPA 61B)	.35
Z12.5-1953	Woodworking Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 663)	.25
Z12.6-1953	Sugar and Cocoa, Safety Code for Pulverizing Systems for (NFPA 62)	.25
Z12.7-1953	Coal Pneumatic Cleaning Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 653)	.25
Z12.8-1946	Wood Flour Manufacturing Establishments, Safety Code for the Prevention of Dust Explosions in (NFPA 662)	.25
Z12.9-1953	Spice Grinding Plants, Safety Code for the Prevention of Dust Ignitions in (NFPA 656)	.25
Z12.10-1943	Inert Gas for Fire and Explosion Prevention, Safety Code for the Use of (NFPA 12A)	.25
Z12.11-1953	Aluminum Bronze Powder, Safety Code for the Prevention of Dust Explosions in the Manufacture of (NFPA 651)	.25
Z12.12-1950	Sulphur Dust Explosions and Fires, Safety Code for the Prevention of (NFPA 655)	.25
Z12.13-1953	Country Grain Elevators, Code for the Prevention of Dust Ignitions in (NFPA 64)	.25
Z12.14-1943	Grain Elevators and Storage Units, Suggested Good Practices for the Application of Suction and Venting for the Control of Dust in (NFPA 661)	.25
Z12.15-1953	Magnesium Powder or Dust, Code for Explosion and Fire Protection in Plants Producing or Handling (NFPA 652)	.25
Z12.16-1946	Plastics Industry, Safety Code for the Prevention of Dust Explosions in the (NFPA 654)	.35
Z12.17-1946	Pulverized Fuel Systems, Safety Code for the Installation of (NFPA 60)	.50
Z12.18-1953	Confectionery Plants, Safety Code for the Prevention of Dust Explosions in (NFPA 657)	.25
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Z35.1-1941 R1945	†Industrial Accident Prevention Signs, Specifications for	.75

● Z37 — Allowable Concentration of Toxic Dusts and Gases:

Z37.1-1941	†Carbon Monoxide, Allowable Concentration of	.35
Z37.2-1941	†Hydrogen Sulfide, Allowable Concentration of	.35
Z37.3-1941	†Carbon Disulfide, Allowable Concentration of	.35
Z37.4-1941	†Benzene, Allowable Concentration of	.35
Z37.6-1948	†Manganese, Allowable Concentration of ..	.35
Z37.7-1943	†Chromic Acid and Chromates, Allowable Concentration of	.35
Z37.8-1943	†Mercury, Allowable Concentration of	.35
Z37.10-1948	†Xylene, Allowable Concentration of	.35
Z37.11-1943	†Lead and Certain of Its Inorganic Compounds, Allowable Concentration of	.35
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Z37.16-1944	†Formaldehyde, Allowable Concentration of	.35
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Z41.4-1944	†Men's Explosives-Operations (Non-sparking) Shoes	
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		Price
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C18.1-1954	Dry Cells and Batteries, Specifications for (NBS Circular C466) .....*In press*	
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L12.4-1946	†Miscellaneous	

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